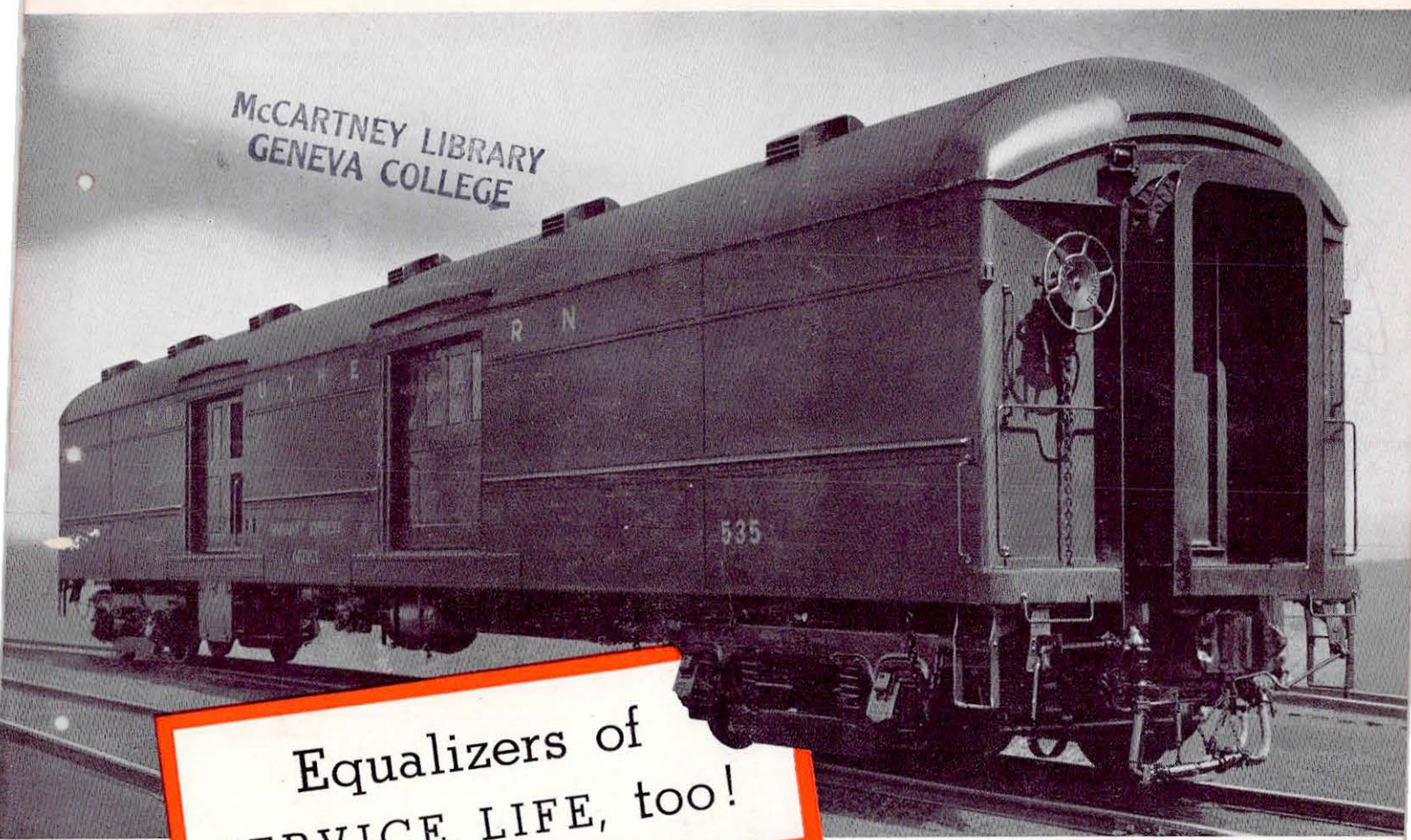
OCTOBER 31, 1942

Railway Age

Founded in 1856



Equalizers of
SERVICE LIFE, too!

BYERS WROUGHT IRON

In the 25 express cars recently built for Southern Railway System by St. Louis Car Company, equalizer bars are Byers Wrought Iron.

The engineers thus assured not only balanced distribution of load and road shocks, but balanced service-life of mechanical parts as well. The extra corrosion resistance and fatigue-resistance of wrought iron compensates for the extra punishment that equalizer bars must stand. Wrought iron pipe was also used in air and signal lines, and steam heating coils installed in each car.

With important uses waiting for every pound of metal produced, it is good citizenship as well as good business to avoid repairs that would take cars out of service and materials out of circulation—and the most important step is selection of proper materials.

Railroad men have been using wrought iron in dozens of applications for years. So many of these men have reported their experiences that we now have a large amount of performance data which we term an "Experience Pool." If you have a problem of selecting material, either for new equipment or repairs, where severe corrosion or shock and vibration make ordinary materials fail too soon, we will be glad to supply you with the experience of other engineers with wrought iron in similar circumstances. If you do not have our General Catalog in your file, let us send you a copy of that also.

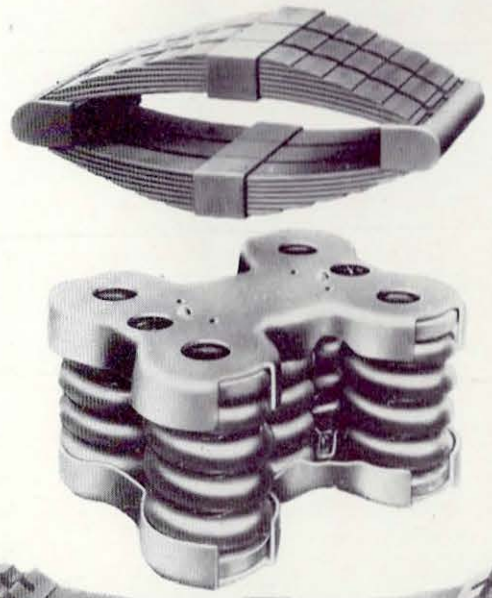
A. M. Byers Company. Established 1864. Offices in Pittsburgh, Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

BYERS
GENUINE WROUGHT IRON
TUBULAR AND HOT ROLLED PRODUCTS
STEEL TUBULAR PRODUCTS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

COME to "HEADQUARTERS"

. . . for High Quality Car and Locomotive Springs



THE manufacture of springs is a highly specialized industry. That is why "Railway" springs deliver the exacting service demanded by heavy and high speed service.

The mechanical excellence results from an unusual and unsurpassed combination of quality materials—ultra modern machinery, expert personnel and workmanship, continuous research and many years of practical experience.

And the same applies to the reclamation of springs. At "Railway" plants, springs are reworked and made as good as new. Anything short of a thoroughly expert job will result in operating difficulties and increased maintenance. It will pay you to come to "Railway" headquarters for high quality car and locomotive springs.

AMERICAN LOCOMOTIVE COMPANY

Railway Steel Spring Division

30 CHURCH STREET, NEW YORK, N. Y.

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 113, No. 18.

For New Men in War Work

THOUSANDS OF MEN and women in civil life are assuming new executive responsibilities in factories producing combat materials, in the construction of war plant buildings and in other operations where the handling of steel is involved. In the Governmental services, thousands more are assigned to similar tasks as foremen, supervisors, senior executives, inspectors, or instructors.

To assist these newcomers in the effective conduct of their work, the Bethlehem Library of Useful Information has been made a free list, whereas previously some of the more elaborate publications have been sold at cost.

The books of the Bethlehem Library of Useful Information have been developed over a period of years by an engineering and metallurgical staff of broad experience. These compact books place at the fingertips of the engineer, the designer, the metallurgist and the executive a great fund of practical information about steel and its uses.

The list is predominantly technical, but also contains a few popular titles giving general information understandable by the layman. The technical titles will be supplied without charge on request, as long as present printings last, to production men, metallurgists, designers and engineers in war work companies. The popular titles are available to anyone engaged in war work, upon application.

A partial list of titles follows:

TECHNICAL

In applying for any book on the technical list, kindly state your position and business address.

Handy Tables for Steel Users
NEW
Publication date, Dec. 2

A compilation of the more generally useful tables from various Bethlehem Steel publications. Includes weights and other data on steel bars, steel strip and bands, flat rolled steel, sheets and plates; sizes and weights of steel wire, pipe sizes and weights; discount tables; mathematical tables, such as combinations of pi; US and metric tables, and other special engineering data. First print order, 5,000 copies.

Tool Steel Treaters' Guide
NEW
Now available

Includes general instructions for working Bethlehem Tool steels, quenching media, heating steel; heat- and temper-color charts; liquid-heating baths; hot-acid etching, the iron-carbon diagram and its applications. Tables of useful data and definitions of many common terms used in the steel industry are also included. First print order, 5,000 copies.

Physical Properties of Bethlehem Steels

This 112-page booklet contains 62 physical properties charts of both carbon and alloy steels. Also included is information on such subjects as effect of cold-drawing, composition hardness, as well as charts for estimating tensile strength of open-hearth and bessemer steels, grain-size charts, and explanation of tension-test terms. Distributed to date, 14,000 copies. New print order, 4,000 copies.

Wheels, Axles and Circular Products

A 304-page handbook containing information relating to the manufacture of wrought steel wheels (rolled and forged for steam road normal equipment) for high-speed light-weight trains, and for electric roads.

Also data on hammer forged products such as axles, crank pins, piston rods, wrist pins, crosshead pins, knuckle pins, shafts and miscellaneous forgings.

Information relating to production of industrial car wheels, crane wheels, mine car and mine locomotive wheels, brake wheels, gear and pinion blanks, locomotive pistons and piston centers, fly wheels, clutch and brake drums, turbine blanks.

Standard specifications for above products.

Forty-six pages of pertinent tables. Fully illustrated with photographs and line drawings. Indexed. First print order, 5,500 copies. On hand, 2,740 copies.

Structural Shapes
Booklet S 51

This book, intended chiefly for designers, gives detail dimensions and properties of Bethlehem Wide-Flange and American Standard Structural Shapes, structural tees and zees, steel-sheet piling and other special shapes.

Information is also included on sizes and weights of plates, round and square bars, rivets, bolts, and turnbuckles. A table shows the most economical section to use for a given section modulus. Distributed to date, 41,000 copies. On hand, 4,000 copies.

Bethlehem Alloy Steels

This authoritative 370-page handbook contains detailed information on various grades of alloy steels. It describes the properties of the steels and includes such subjects as grain size, cold-drawing, endurance, strength, composition hardness, and an explanation of tension-test terms, etc.

Quenching media, pyrometers, liquid heating baths, etc., are discussed. The book contains an interesting series of high-speed photographs showing what happens during quenching of parts in water, brine and oil; charts of heat and temper colors of steel; definitions of terms; and 140 pages of tables. Printed and distributed, 13,120 copies. On hand, 1,880 copies. *New and revised edition in preparation.*

Bethlehem Carbon Steel Bars and Special Sections

This 484-page handbook contains dimensioned line drawings of nearly 1,000 special bar sections, and lists the upper and lower limits of standard merchant shapes.

A list of S. A. E. steels, 16 physical properties charts of carbon steels, information on steels for specific applications, and illustrations of about 350 typical forgings made from carbon steel bars are included.

A section on properties of steel includes information on hardening characteristics, effect of cold-drawing, effect of size and mass, the iron-carbon diagram, examples of results obtained from hot-acid etching, an explanation of tension-test terms, and other data. In addition, 177 pages of tables of weights of various steel sections. Distributed, 7,061 copies. On hand, 2,939 copies.

Steel Plates

A 362-page handbook of useful information for designers and fabricators who use steel plates, flanged-plate products and dished heads.

Tables include plate sizes, bearing and base plates, rectangular and circular plates, moments of inertia, and flat plate formulas. A section is devoted to tank and boiler heads of various sizes and the design of boilers and pressure vessels.

Supplementary tables contain sizes of American Standard and Bethlehem Wide-Flange Structural Shapes; 126 pages of weights, capacities of cylinders and spheres, and other useful data. Distributed, 19,587 copies. On hand, 5,413 copies.

An Introduction to Shipbuilding

Semi-technical booklet on elements of shipbuilding, including glossary of technical terms. 45,000 copies have been printed and distributed by Bethlehem Steel. Further publication of the booklet has been undertaken by War Production Board, Labor Division. Now available from Government Printing Office at 20c per copy.

POPULAR

Steel in the Making

An 80-page non-technical booklet on the making of steel and steel products. Both the steel-making processes, and mechanical forming of the steel to make such products as bars, sheets, tinplate, wire and pipe are described. First edition, 5,000 copies. On press, 10,000 copies, 4,000 for back orders and 6,000 for current distribution.

Your Land

For farmers, county agents, students of agricultural economics and soil conservation experts. Contains data on soil conservation practices and the economical use of farm steels. First edition, 10,000 copies exhausted on publication date. Second edition, 10,000 copies. Third edition on press, 20,000 copies.

Accident Prevention Practices
NEW
Publication date, Dec. 15

Handsomely illustrated booklet depicting practical safety methods, based on 26 years of accident prevention work in Bethlehem Steel Company plants, which have reduced accident rates 80%. Current safety procedures and principles applicable to metal-working industries generally. First print order, 5,000 copies.

BETHLEHEM STEEL

Folder of full list of Bethlehem Library of Useful Information available on request. Address Publication Division, Room 749, Bethlehem Steel Company, Bethlehem, Pa.

ON October 1, 1942, Edgewater Steel Company was honored by receiving the Army-Navy Production Award for high achievement in the production of war equipment.

We are proud of this honor and are no less proud that it has been achieved without reducing our contribution to railroad transportation. The great work of American railroads is a vital factor in the country's war effort. Car wheels and locomotive tires are essential to that work, and the supply from Edgewater has kept pace with the demand. We have delivered armament without neglecting the rolling stock on which the armament must go to the front.

EDGEWATER STEEL COMPANY - PITTSBURGH, PA.

Sales Offices:

ATLANTA BALTIMORE BOSTON CHICAGO CLEVELAND KANSAS CITY LOUISVILLE NEW YORK PHILADELPHIA PORTLAND ST. LOUIS ST. PAUL SAN FRANCISCO SEATTLE TULSA WASHINGTON

FOAM-FREE . . .

thanks to Dearborn's non-saponifiable Anti-Foam

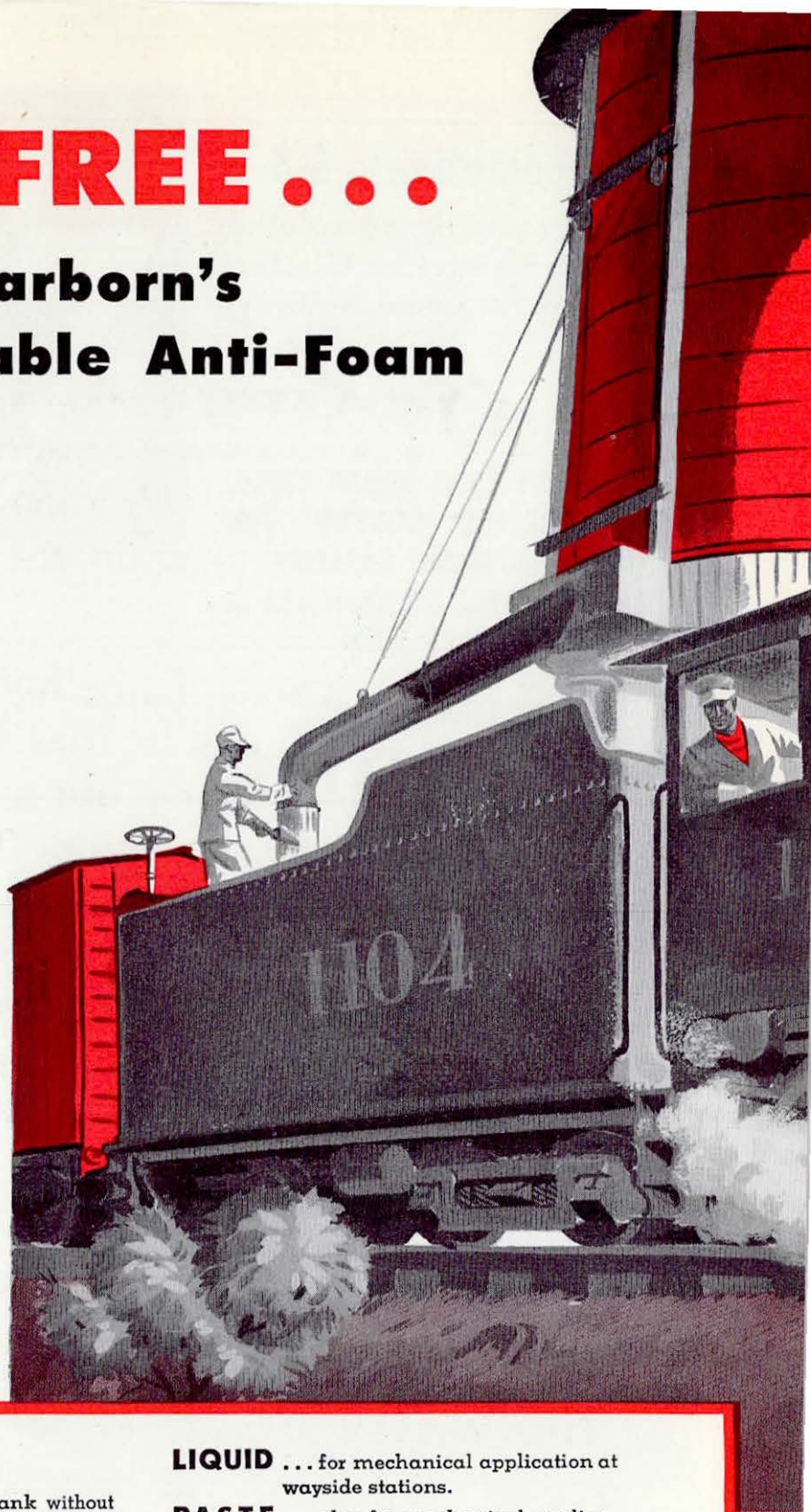
Water is taken on from a troublesome supply. But to the water, the engineman is adding the new Dearborn anti-foam in powdered form. He knows his foaming troubles in this bad water district are over. He also knows that he can run into the next district, in which the water is not troublesome, without contamination, holding the concentration down by regular blowoff to a point where the water will not foam. This new anti-foam does not form residual soap in the locomotive boiler to foam up later in districts where the water does not have to be treated.

Thus by using this new anti-foam, which acts as a leveler, locomotives can run from a troublesome water district into a non-troublesome water district without cleaning the boiler or changing the water in the tender tank.

Dearborn new anti-foam is substantially non-saponifiable and non-hydrolyzable in alkaline boiler waters. It has an effective life many times that of any available organic anti-foam material, providing a flexibility of locomotive operation that is so desirable these days.

The Dearborn Engineer in your territory will gladly demonstrate this new anti-foam to you.

DEARBORN CHEMICAL COMPANY
310 South Michigan Avenue, Chicago, Illinois
205 E. 42nd Street, New York
2454 Dundas St., West, Toronto
807-15 Mateo St., Los Angeles



POWDER . . . TO BE SURE

In this form it can be added to the tender tank without previous mixing. It is super-pulverized to assure finest dispersion of active ingredients, without sifting out. Chemicals retain their most effective form throughout a large volume of water such as in a locomotive boiler without agglomeration.

LIQUID . . . for mechanical application at wayside stations.

PASTE . . . also for mechanical application at wayside stations.

BRICK . . . for manual or mechanical application at wayside stations.

Dearborn

TRADE MARK REGISTERED

SCIENTIFIC WATER TREATMENT

10 locomotives, 4-8-4 type, recently completed for the Nashville, Chattanooga & St. Louis Railway.

On the Road to VICTORY

FOR SAFETY FROM BOILER EXPLOSION · FOR FUEL ECONOMY · FOR GREATER BOILER CAPACITY EACH OF THESE LOCOMOTIVES IS EQUIPPED WITH

NICHOLSON THERMIC

SYPHONS

TWO IN THE FIREBOX AND ONE IN THE COMBUSTION CHAMBER

Syphons produce more boiler capacity with ***less weight, less steel, less labor and less cost,*** and for equivalent results assure greater economy in service and maintenance than larger boilers without Syphons plus safety from boiler explosions.

Locomotive Firebox Company

NEW YORK CHICAGO MONTREAL

WHY THE TRAINMEN ALWAYS WAVE

● **A small boy,** on a station platform, waves to a grimy engineman of a steaming hot shot—rolling, nonstop, across fertile Illinois from Chicago to the Mississippi River. That boy's father, mother, and sister join in waving. The engineer leans from his cab to return the salute. The fireman on the deck also waves. All hands grin understandingly.

A giant diesel-electric is roaring across Western deserts, hauling a modern streamliner. School kids, ranchers, Indians, matrons—all wave greetings. Motorists wave from a highway as they try to race with this newest and most sensational of locomotives. The cigar-smoking engineer, in clean overalls, lifts his arm from a padded arm rest of his swivel chair to wave at these friends he may never meet.

A local drag freight puffs around a New England mountain. The engineer takes his eyes off the steel ribbons a moment; the fireman straightens from his shoveling as they pass a certain farmhouse. A farmer, his wife, children, and hired hand wave in scheduled ceremony. The trainmen, from front end to caboose, return this time-honored courtesy.

For more than a century, from Atlantic to Pacific and from Mexico to Canada, these daily waves have cemented friendships which are seldom expressed in words. Few of these millions of wavers analyze the motive behind the wave. Most of us wave to a passing train in response to an undefined feeling. We do not realize that the wave is the *symbol of the soul of railroading.*

It remained for a distinguished clergyman, lecturer, and writer—the Reverend Dr. Henry Hitt Crane, now preaching at Detroit—to explain the deep meaning of this waving. He was preaching at Scranton, Pa. when Engineman John Draney gave him a seat on the right side of the cab, then opened the throttle, and they ate up the landscape.

Absorbed by a sense of power the locomotive gave him, Dr. Crane folded his arms and looked straight ahead, until a sharp tap on his shoulder prompted him to turn around to Draney. The latter was waving to some youngsters who were waving their hats from a field. "Always wave!" the engineman shouted in the clergyman's ear.

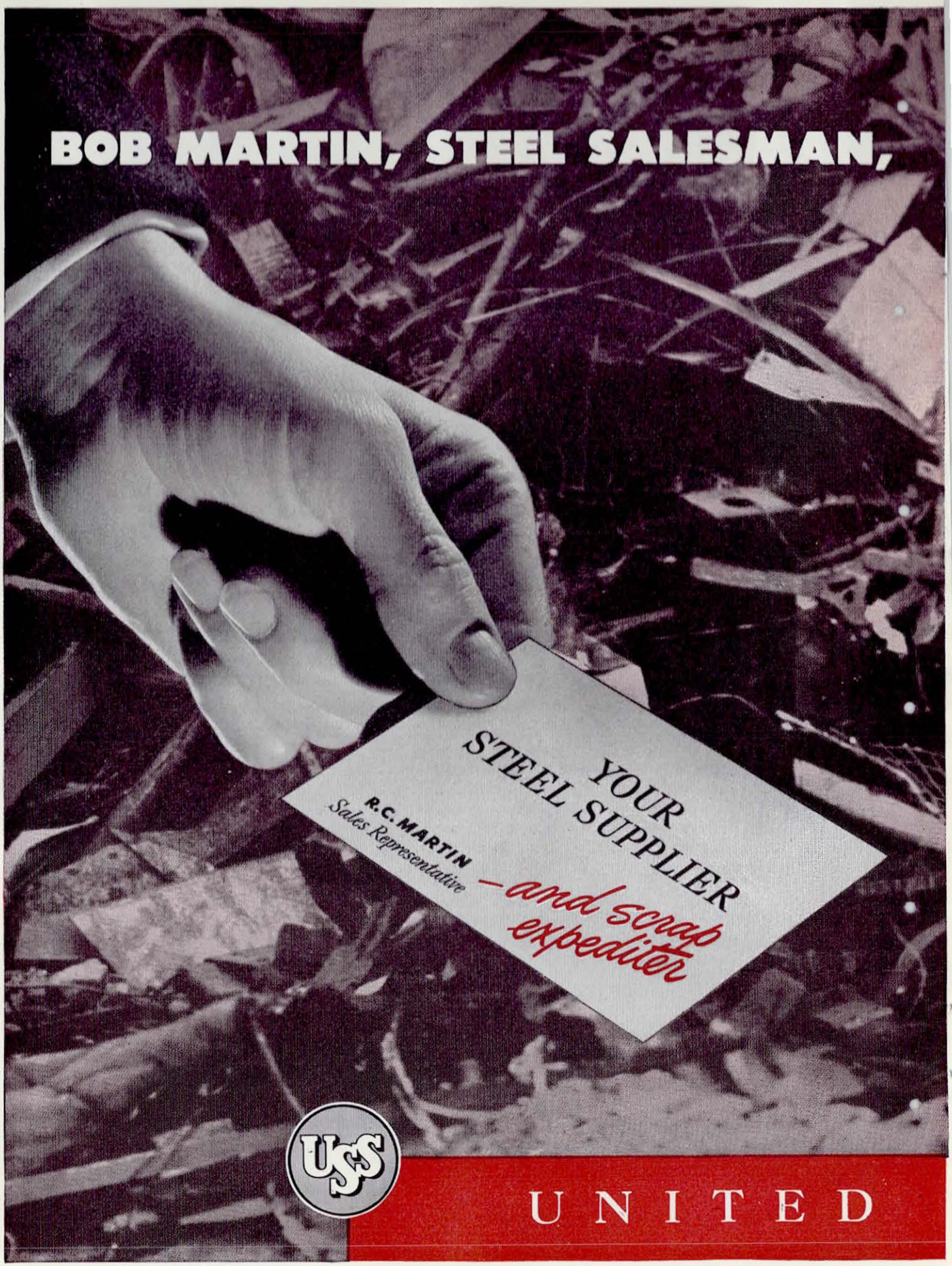
Dr. Crane never forgot that first rule in a trainman's codebook. For, as he later declared: "The wave is the sign and countersign of the greatest fraternity on earth, Humanity—the happy hailing sign of sheer good will."

Railroaders keep on waving while they keep 'em rolling because they know the wave is the symbol of the railroad's soul.

—The Trackwalker

AMERICAN LOCOMOTIVE ● GENERAL ELECTRIC

114-31-9500


BOB MARTIN, STEEL SALESMAN,
YOUR STEEL SUPPLIER
R.C. MARTIN
Sales Representative
—and scrap expediter
USS
UNITED

IS NOW A *Scrap Expediter!*

American steel producers and steel warehouses are mobilizing their sales personnel to help you do a 100% job of getting in the scrap

WE'VE called him Bob Martin for short. He may be a U·S·S salesman, or he may represent some other steel supplier. In any case, it's his job to help you get the steel you need for war production when you need it. Things being what they are, that's a tough assignment in itself.

But now Bob Martin and many of his fellow salesmen have another war job. They've been made scrap expediters, too! The grave need for more scrap to produce more steel calls for unprecedented action. That's why the Steel Industry has joined forces with the War Production Board to make a thorough, continuous canvass of America's industrial scrap resources in the plants of steel consumers.

So don't be surprised if the next steel salesman who calls at your plant asks first how he can assist your scrap drive. His experience equips him to help you do the best possible salvage job. And he has been given special information by the WPB to make his efforts tie in closely with the Government's salvage program.

How a Steel Salesman Will Help to Expedite Your Scrap Drive.

On his new job as a scrap fieldman, in cooperation with the WPB, the steel salesman assigned to your plant will:

1. Call on a principal executive. Explain the WPB Dormant Scrap Drive objectives, and ask for your active and immediate cooperation.
2. Help, in doubtful cases, to identify dormant scrap, such as obsolete machinery, tools and equipment which are useless to war production because they are broken, worn out or not repairable.
3. Assist in facilitating the disposal of dormant scrap.

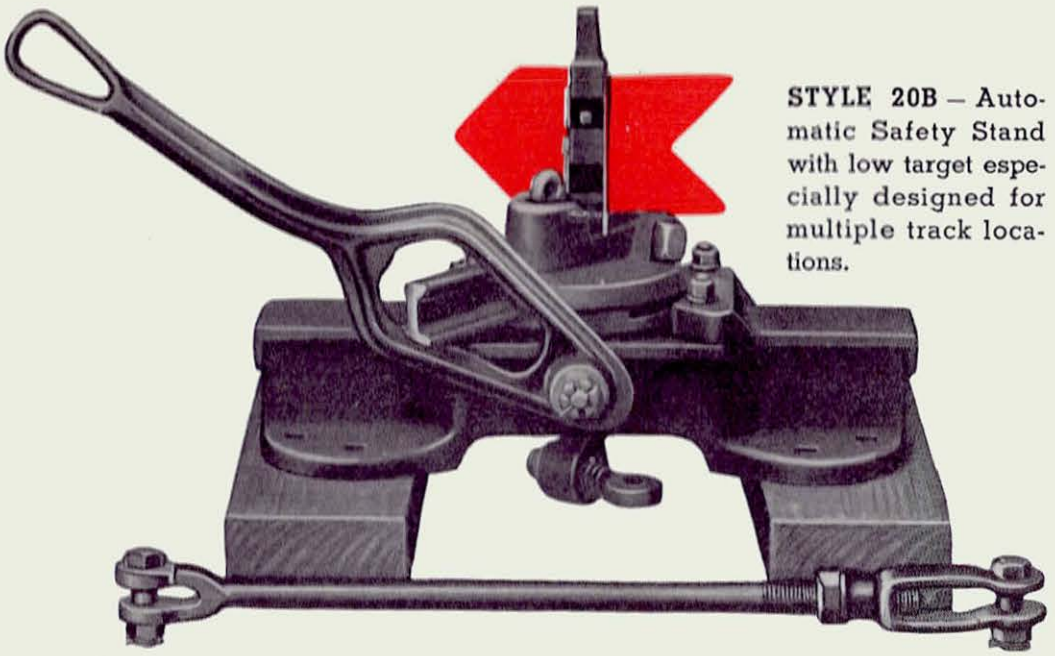
The need for scrap is URGENT! By December 31, 1942, an inventory of 7,000,000 tons must be made available to steel mills. Do *your* part by helping the steel salesman to do *his* part in this all-important drive.

HELP FOR YOUR SCRAP DRIVE

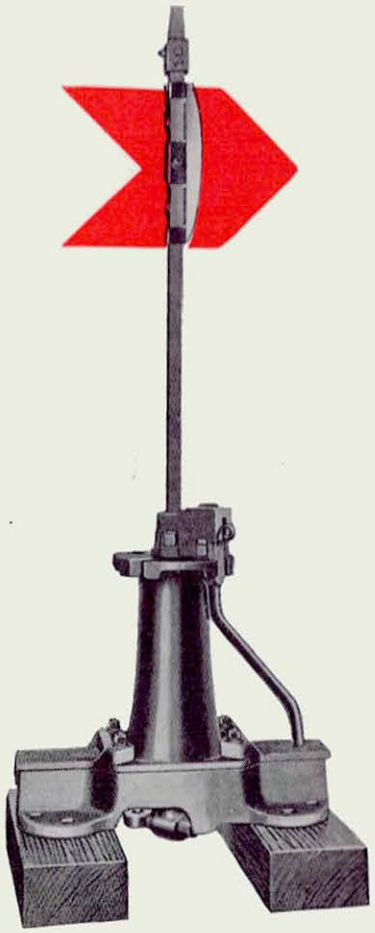
Inform your employees by showing the new sound slide film, "Let's Get in the Scrap." We'll be glad to lend you a print. Write to United States Steel Corporation, Room 1637, 436 Seventh Ave., Pittsburgh, Pennsylvania.

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York* • CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago* • COLUMBIA STEEL COMPANY, *San Francisco* • NATIONAL TUBE COMPANY, *Pittsburgh* • TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham* • SCULLY STEEL PRODUCTS COMPANY, *Chicago, Warehouse Distributors*

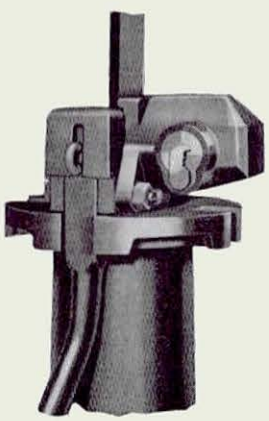
UNITED STATES STEEL



STYLE 20B – Automatic Safety Stand with low target especially designed for multiple track locations.



STYLE 17C—An efficient main line switch stand. Hand lever cannot be disengaged from bracket. Eversure lock may be used on this stand preventing loss of padlocks.



View of Eversure Lock Furnished when specified.

MINIMIZE DELAYS

with RACOR AUTOMATIC SAFETY SWITCH STANDS

At hand-thrown switch locations, the inherent automatic safety feature of these switch stands prevents damage to the stands and switch points, even though trailed through when set in the closed position. By reducing the possibility of such break-downs, unnecessary delays and time-consuming repairs to track and equipment are minimized.

Racor Automatic Safety Switch Stands indicate the position of the switch points by target or lamp. All models are designed to eliminate fatigue failures and to withstand all operating stresses. There are other operating and construction features which our representative will be glad to tell you about.

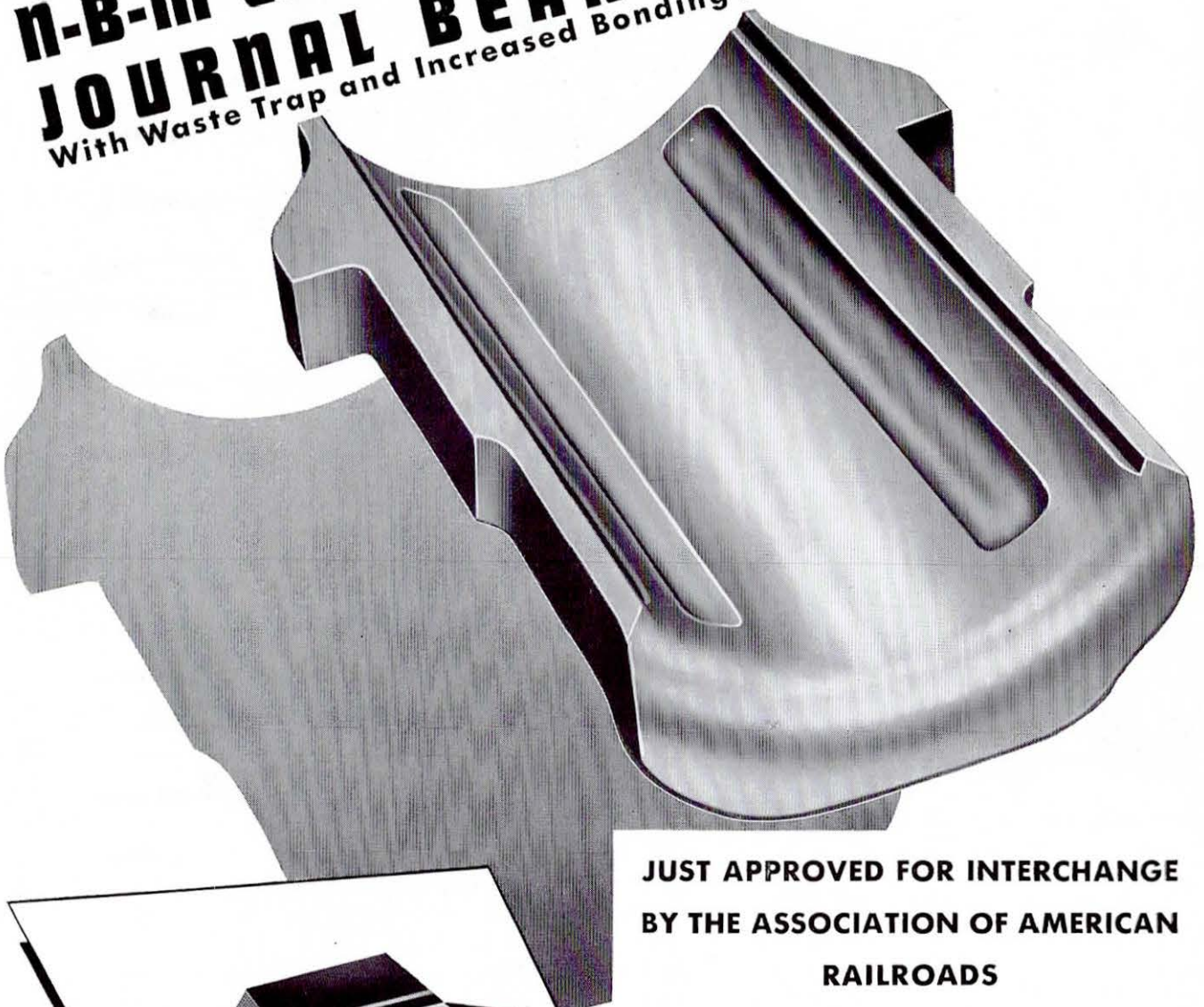
RAMAPO AJAX DIVISION

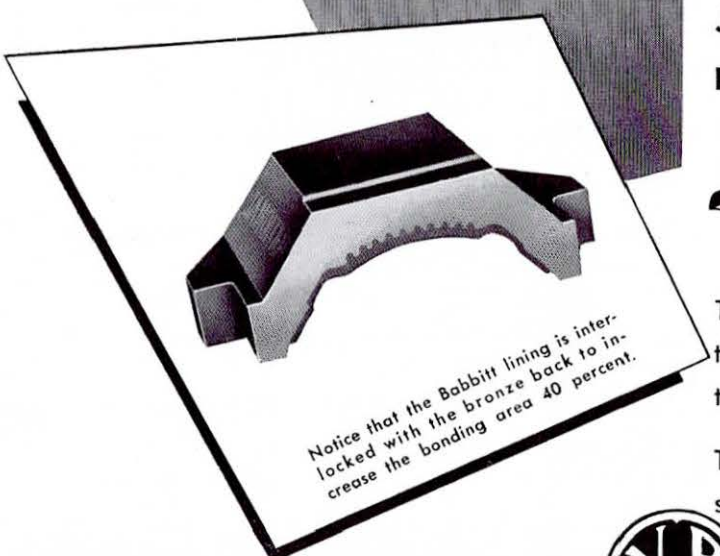
RACOR

THE AMERICAN BRAKE SHOE & FOUNDRY CO. • 230 Park Ave., New York

N-B-M EMERGENCY TYPE JOURNAL BEARINGS

With Waste Trap and Increased Bonding Area





Notice that the Babbitt lining is interlocked with the bronze back to increase the bonding area 40 percent.

JUST APPROVED FOR INTERCHANGE BY THE ASSOCIATION OF AMERICAN RAILROADS

The grooves trap waste and lint and prevent waste grab, the major cause of hot boxes.

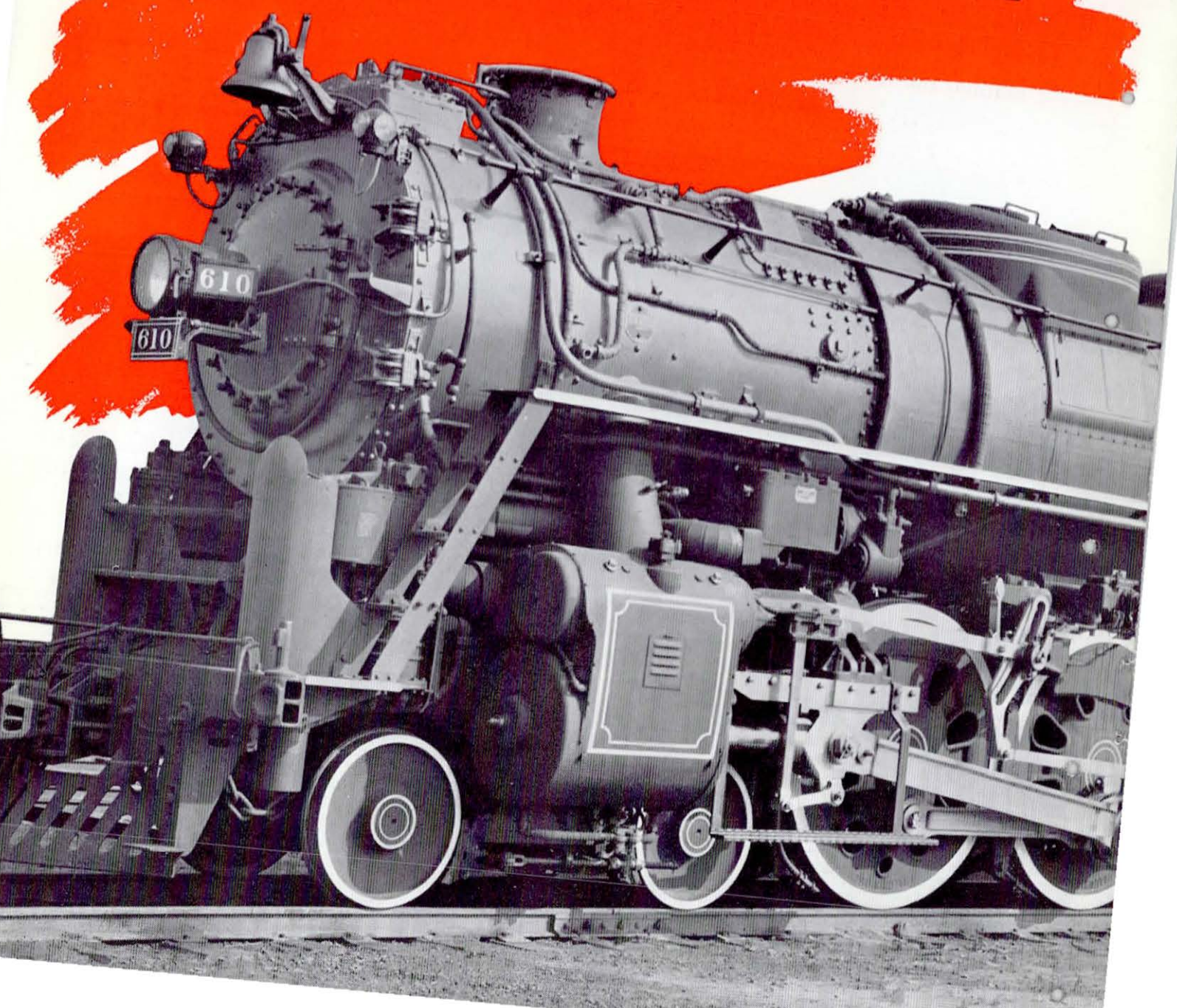
The corrugated back interlocks the lining with the bronze. This increased bonding area reduces the danger of loose or cracked linings.

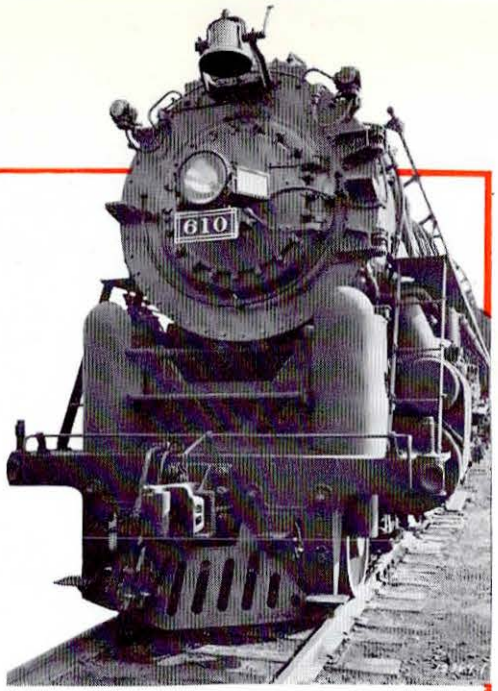
These N-B-M Journal Bearings will ease the strain of war transportation on your cars.

NATIONAL BEARING METALS CORPORATION

ST. LOUIS • NEW YORK

6 MORE "GOVERNORS" FOR THE RICHMOND-WASHINGTON LINE





The Richmond, Fredericksburg & Potomac Railroad is putting into service six more Baldwin 4-8-4 type locomotives designed for high speed freight and passenger service.

Bearing the names of former Governors of Virginia, the new locomotives are practically duplicates of six "Governors" built by Baldwin in 1938.

The "Governors", in heavy, high-speed passenger service between Richmond and Washington, have established a fine record for high monthly mileage and high mileage between class 3 repairs. Operating and repair costs have been correspondingly low.

These locomotives, like hundreds of others from the Baldwin works, are helping the railroads to meet the unprecedented transportation demands of a Nation at war. Baldwin military tanks, guns, gun mounts and other materiel for our armed forces are serving America on the field of battle.

Baldwin serves the Nation which the Railroads helped to build

Keep'em Moving with SAFETY

The new streamlined passenger cars recently placed in service by the New York Central Railroad, are equipped with A.A.R. Tight Lock couplers manufactured by National.

A. A. R. TIGHT LOCK COUPLERS

Eliminate slack in coupler contour
Eliminate noise caused by coupler slack
Anti-climbing feature prevents telescoping
Are self compensating for wear and seating of parts
Meet all A.A.R. specifications for new passenger cars.

NATIONAL MALLEABLE AND STEEL CASTINGS CO.
General Offices: CLEVELAND, OHIO
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco.
Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

Decrease brake beam failures

with **SLEEVE HEADS**

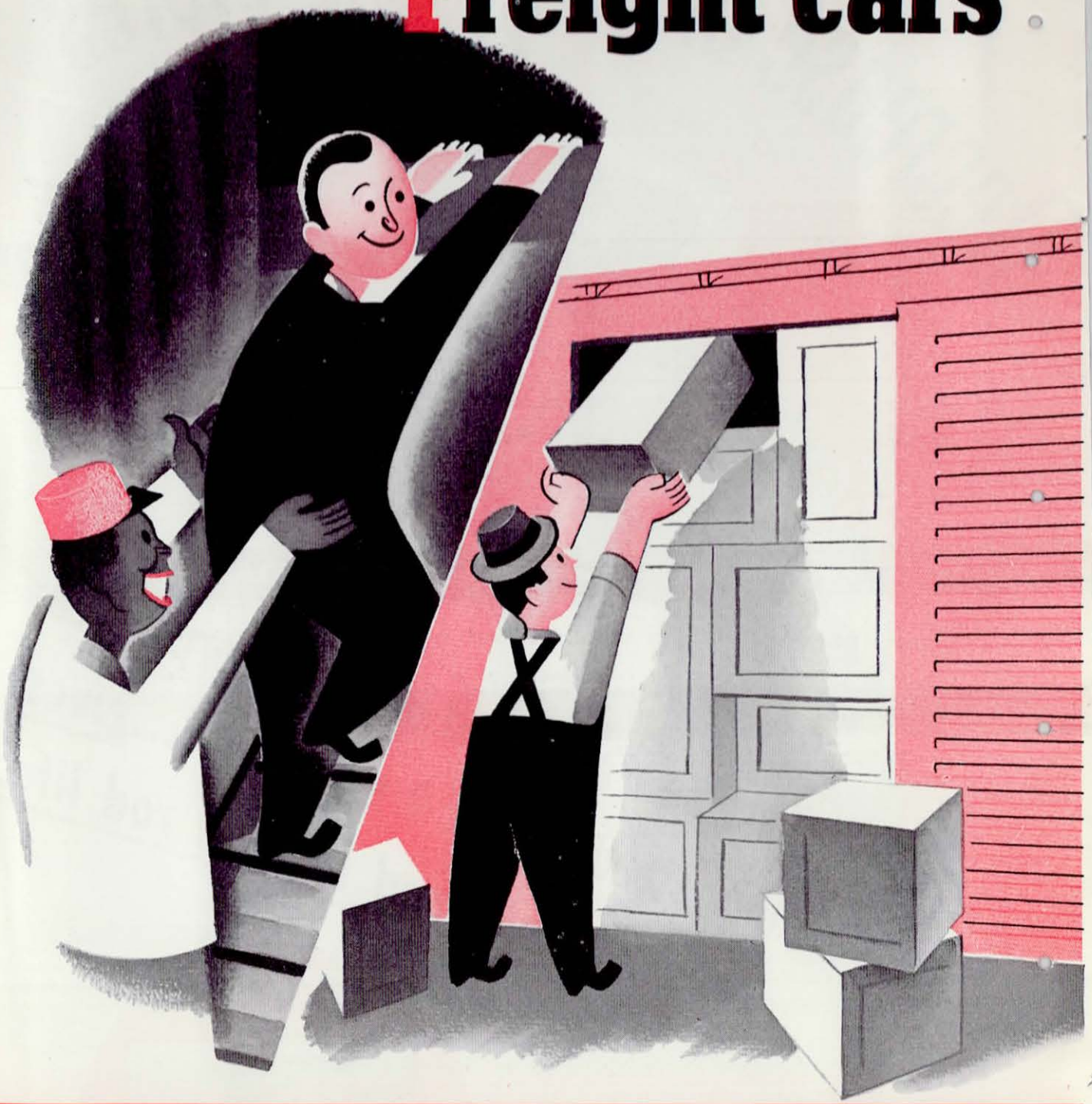
This new approved sleeve incorporated into standard A.A.R. brake head...gives greatly increased tension rod life.

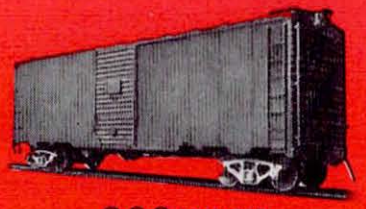
Over 2,500,000 now in service

CHICAGO RAILWAY EQUIPMENT CO.

McCormick Building, Chicago

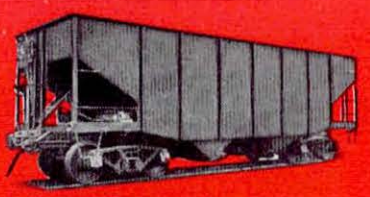
Freight cars





A.C.F. BOX CAR

A.C.F. GONDOLA CAR



A.C.F. HOPPER CAR

have "uppers" too

Any night now, you'll see many a war-busy "big shot" climbing into an upper berth — and proud to do so! By the same token, you'll find many a leading shipper of freight now packing in precious *extra* tons, until he has filled to capacity every war-needed freight car he calls for today.

Some measure of this fuller use by the public of the freight car's transportation possibilities — coupled with the remarkable efficiency with which the railroads are operating every unit of their equipment — may be found in the fact that revenue ton miles are up by 32% over last year's figures — and top by 47% the record of the boom year of 1929!

Of course, this great increase in transportation rendered, came from no single cause. Many factors contributed. And many more will have to play their part as the demands on the railroads mount ever higher. Already our nation is reaping important benefits as each vitally needed freight car gains greater and greater carrying power. To the furtherance of this urgent cause we pledge our every aid.

a.c.f.

AMERICAN CAR AND FOUNDRY COMPANY

NEW YORK · CHICAGO · ST. LOUIS · CLEVELAND · PHILADELPHIA · PITTSBURGH · ST. PAUL · SAN FRANCISCO

WHATEVER a.c.f. BUILDS—IT IS KNOWN TO BUILD WELL!

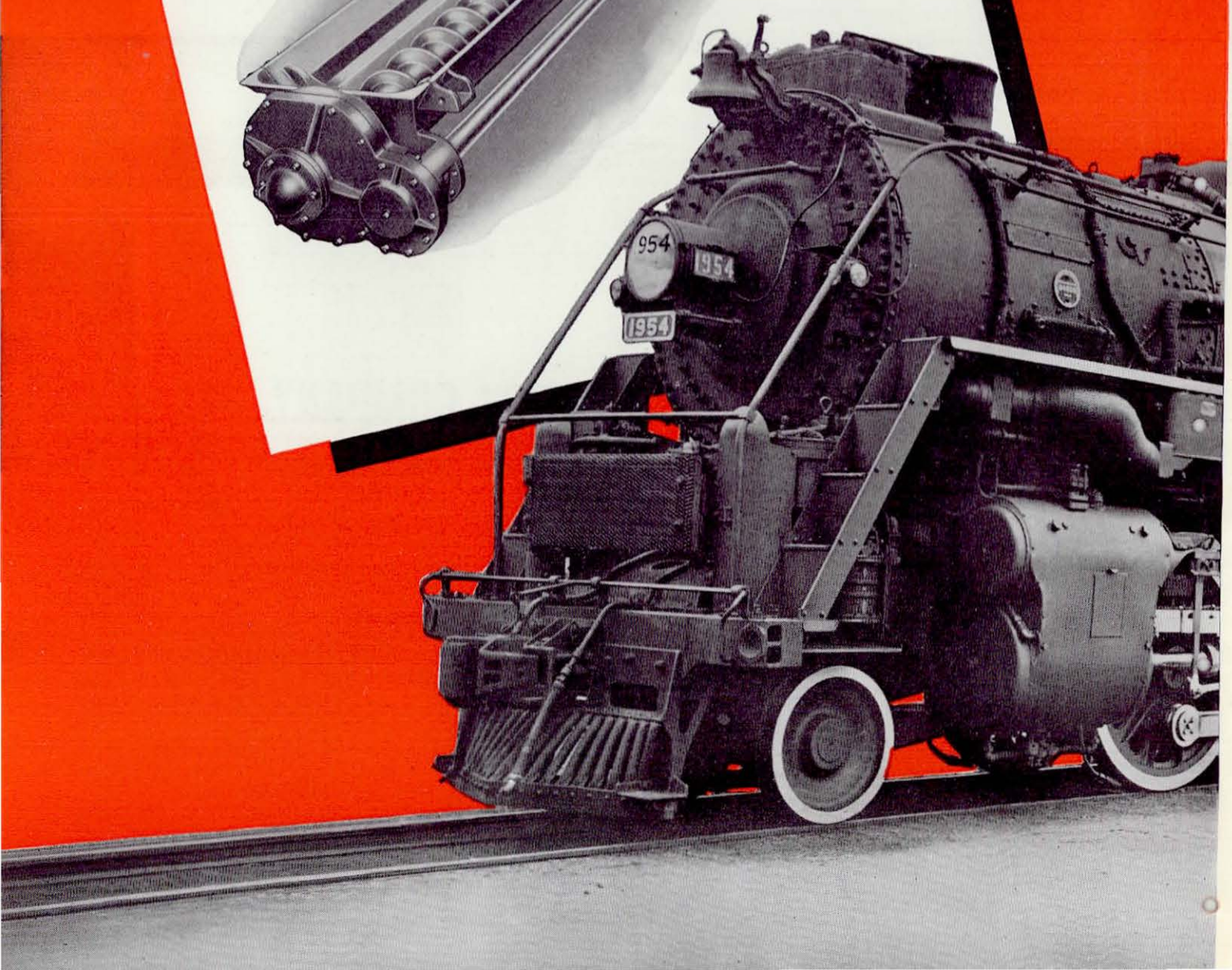
a.c.f. — BUILT SHPX TANK CAR

a.c.f. FLAT CAR

a.c.f. ORE CAR

VICTORY on

HANNA STOKER
Type H-4



the Firing Line

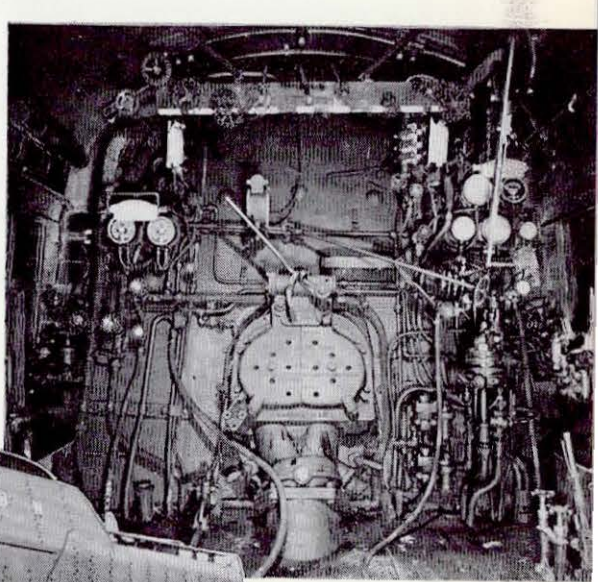
LOCOMOTIVES equipped with HANNA STOKERS are playing a vital part in the battle for Victory transportation. Complete fuel combustion, full utilization of every square foot of grate area, dependable performance and low maintenance costs are the outstanding reasons which make HANNA STOKERS victors on the firing line.

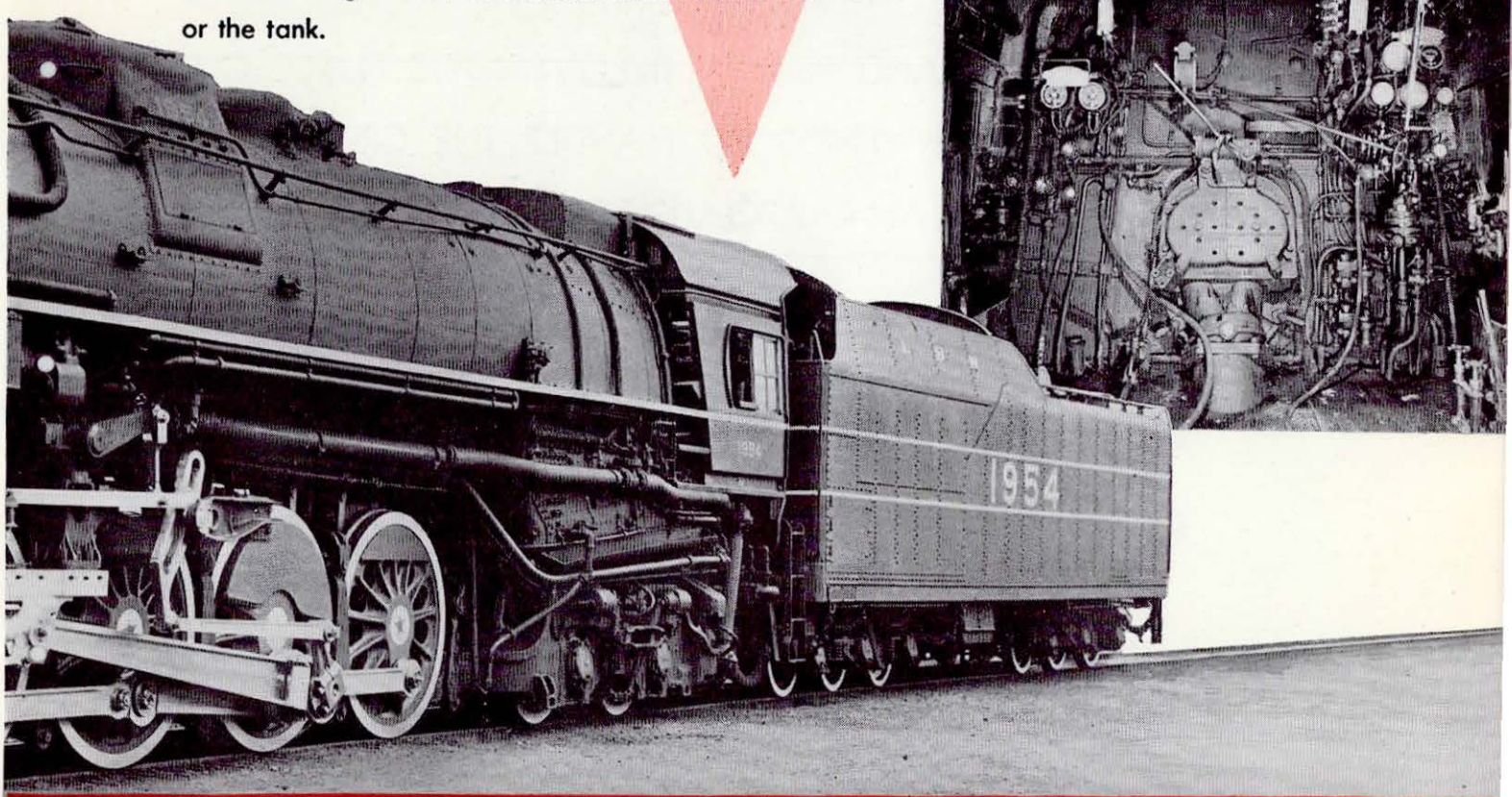
The type H-4 HANNA STOKER is a streamlined design which incorporates every essential detail required for economical fuel consumption on the intensively operated power of today. One of the best proofs of dependability and efficient performance is the fact that firemen use their seniority rights to bid in runs hauled by HANNA fired locomotives.

The HANNA System permits easy access to the firebox and an unobstructed view of the conditioning of the coal and its controlled distribution to all parts of the firebed.

HANNA STOKERS are now in use on 21 leading railroads. Recent applications include the fourteen new 2-8-4 locomotives built for the Louisville & Nashville Railroad.

HANNA STOKERS are readily adaptable to light weight locomotives, as well as the heavier power of today, and the stoker engine may be mounted either on the locomotive or the tank.

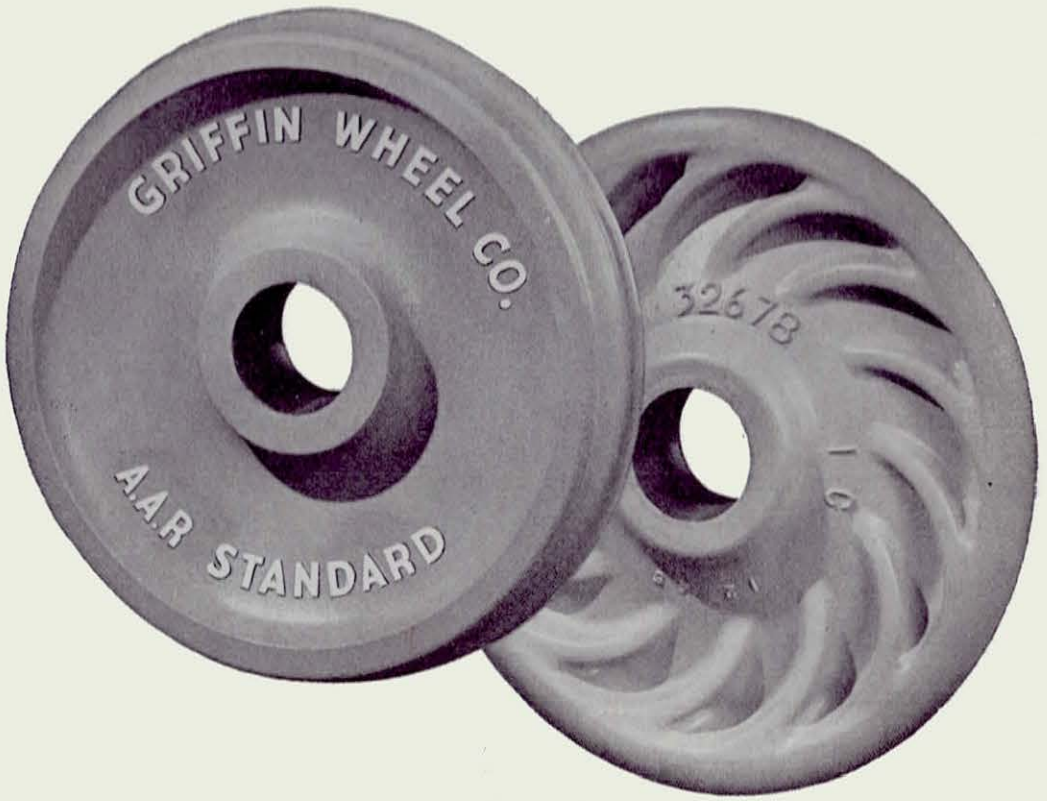




THE HANNA STOKER COMPANY

CINCINNATI, OHIO

GRIFFIN WHEEL COMPANY



INCREASED CAPACITY AND PLANT IMPROVEMENTS PLACE OUR TWELVE PLANTS IN READINESS TO HANDLE THE GREATER DEMANDS OF THE AMERICAN RAILROADS FOR THE COMING WINTER.

KEEP THE CARS ROLLING

ON GRIFFIN CHILLED WHEELS

GRIFFIN WHEEL COMPANY

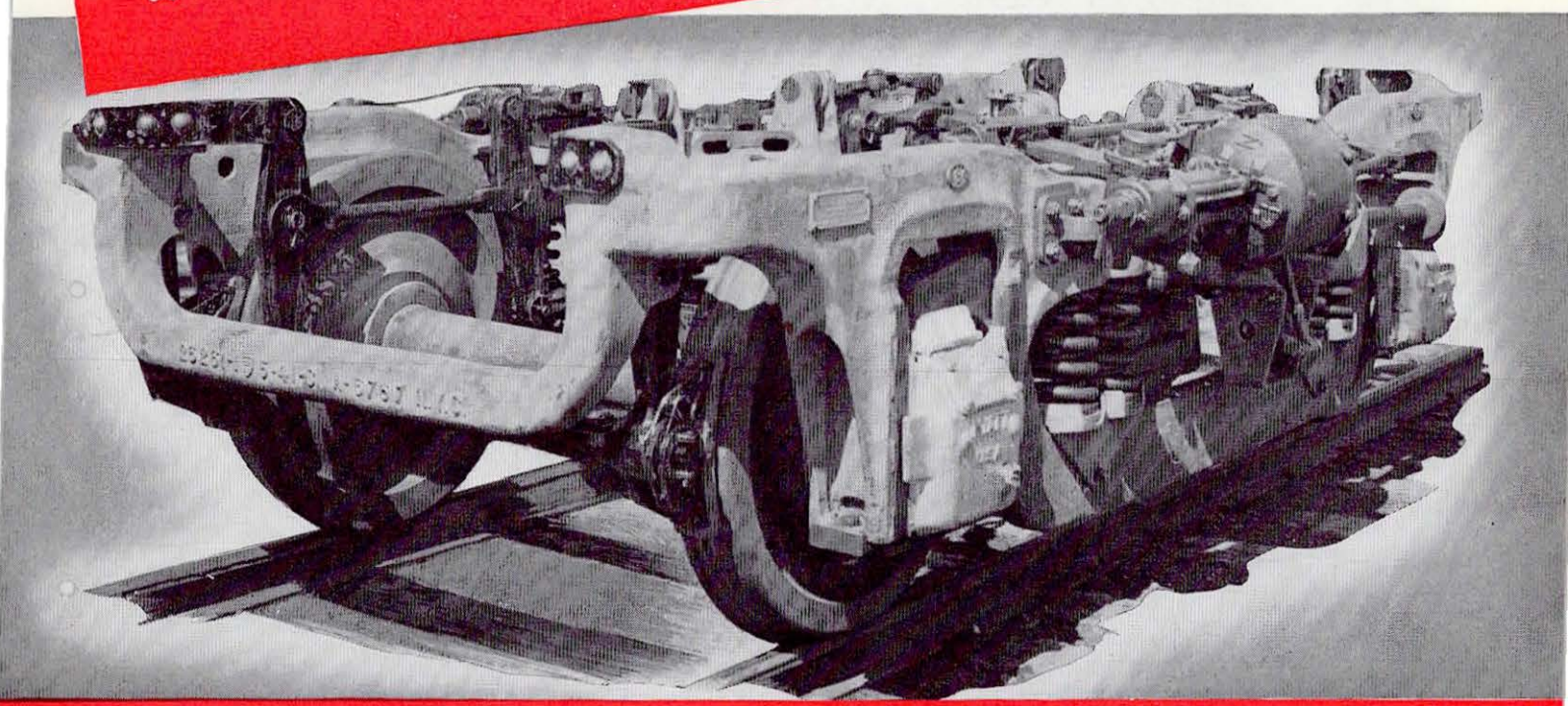
410 NORTH MICHIGAN AVE., CHICAGO, ILL.

PLANTS Chicago, Detroit; Boston, Cleveland; Cincinnati, St. Paul; Kansas City, Council Bluffs; Denver, Salt Lake City; Los Angeles, Tacoma

THE NEW CARS

are equipped with SIMPLEX UNIT CYLINDER CLASP BRAKES

for NEW YORK CENTRAL SYSTEM



Simplex Unit Cylinder Clasp Brakes contribute greatly to modern high speed train operation. They are applied to a large majority of the streamliners.

The New York Central has recently accepted delivery on the last of a large order of coaches which were built by the American Car & Foundry Co. . . . E. G. Budd Mfg. Co. . . . Pressed Steel Car Co. . . . Pullman-Standard Car Mfg. Co.

Simplex Unit Cylinder Clasp Brakes were specified on 111 of these coaches . . . and were applied to 16 cars on the Empire State Express.

AMERICAN STEEL FOUNDRIES

KEEPING PACE with *Progress*

• ***With New Products*** — A complete and improved line of motor cars; maintenance-of-way equipment, including tie-pullers, jacks, tie nippers and many other tools.

• ***With Improved Service*** — To keep Buda equipment operating at wartime efficiency, servicemen are now located at all strategic points in the United States. Buda Parts and Service departments have been greatly enlarged to handle increased demands.

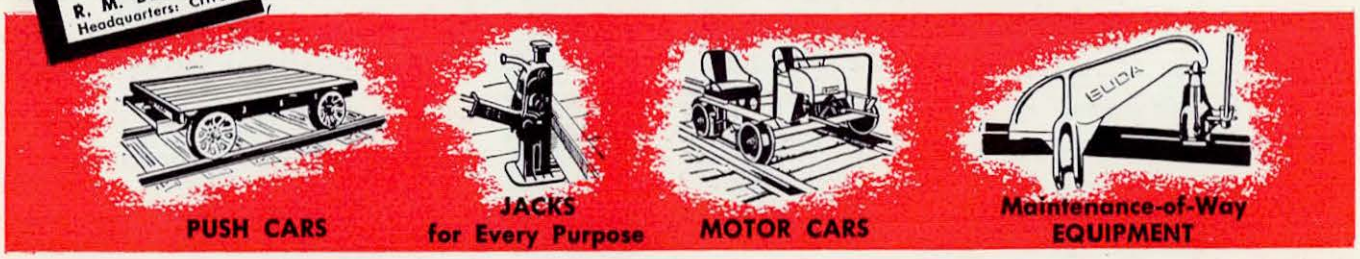
• ***With Engineering Skill*** — Buda's engineering staff, devoted exclusively to the development of railroad equipment and supplies, is today the largest in its history.

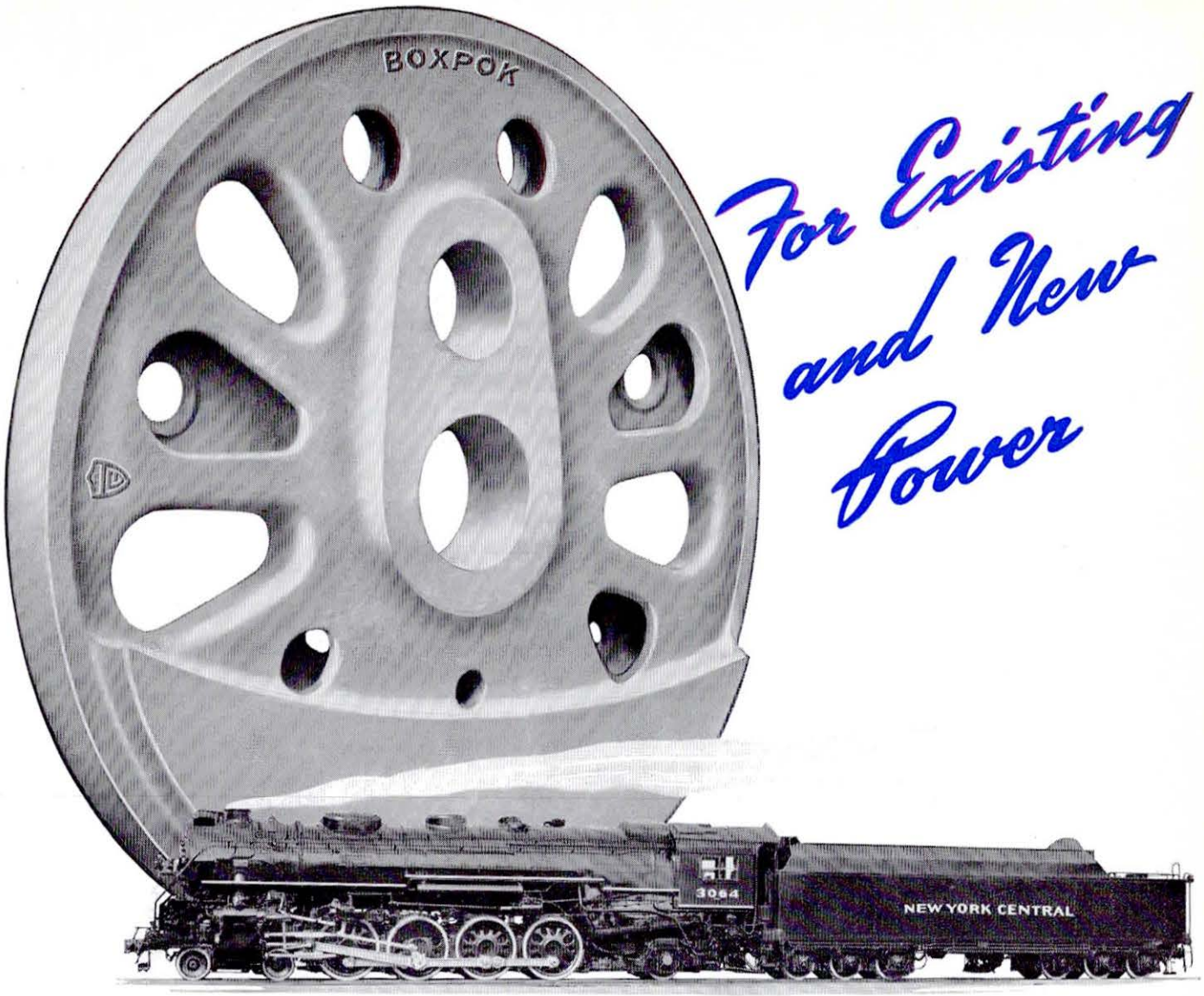
• ***With Greater Emphasis on Your Needs***—Through scores of daily contacts with all phases of railroading, BUDA field representatives and engineers maintain a close watch over changing conditions — ready to help solve new problems when they arise.

Remember that "A BUDA man will help you Plan"
—you'll be hours and dollars ahead.

THE BUDA COMPANY

HARVEY (Chicago Suburb) ILLINOIS





For Existing and New Power

BOXPOK

DRIVING WHEEL CENTERS

Today's heavy tonnage trains, high operating speeds, and greater density of traffic have imposed added burdens upon locomotives, tracks, and road beds.

To meet these conditions, stronger, better designed and balanced Driving Wheels are a necessity as the PROBLEM OF MAINTENANCE has become a factor of the greatest importance.

BOXPOK Driving Wheels are the answer to these problems. They prevent out-of-round wheels and flat spots — wheels stay round — tire mileage is increased. Lightness in weight and more effective counterbalancing permit high speeds with less wear and tear on track and locomotive.

ARMY E NAVY

GENERAL STEEL CASTINGS

EDDYSTONE, PA. GRANITE CITY, ILL.

U.S. TRAVEL
1942 STYLE

IN the months since Pearl Harbor the railroads of the United States have carried three times as many soldiers as in the same months of the last war.

Of the 6,800 Pullman sleeping cars and 17,500 passenger coaches on the railroads today, a great part are assigned to military movements—and the armed forces have first call on all the rest.

Besides troop movements, there are those who must travel on essential war business. There are service men on furlough. There is the shortage of tires and the rationing of gasoline — all adding to the demand for space on the trains.

That demand must be met with the cars we have—other war needs make it impossible to get any more.

So please help the other fellow who *must* travel—and help yourself — and help us to get the best use out of what we have.

DON'T WASTE TRANSPORTATION. *Plan early*—Make reservations and buy tickets as far in advance as possible. *Avoid week ends*—Do your traveling in the middle of the week whenever possible. *Travel light*—Limit your hand baggage to actual requirements. Other baggage can be checked. *Plans changed?*—Cancel your reservation promptly if your trip is deferred or called off. It will help the other fellow.

★ ★

ASSOCIATION OF
AMERICAN RAILROADS
WASHINGTON, D. C.

safety minded

...thinking safety means *building safely*

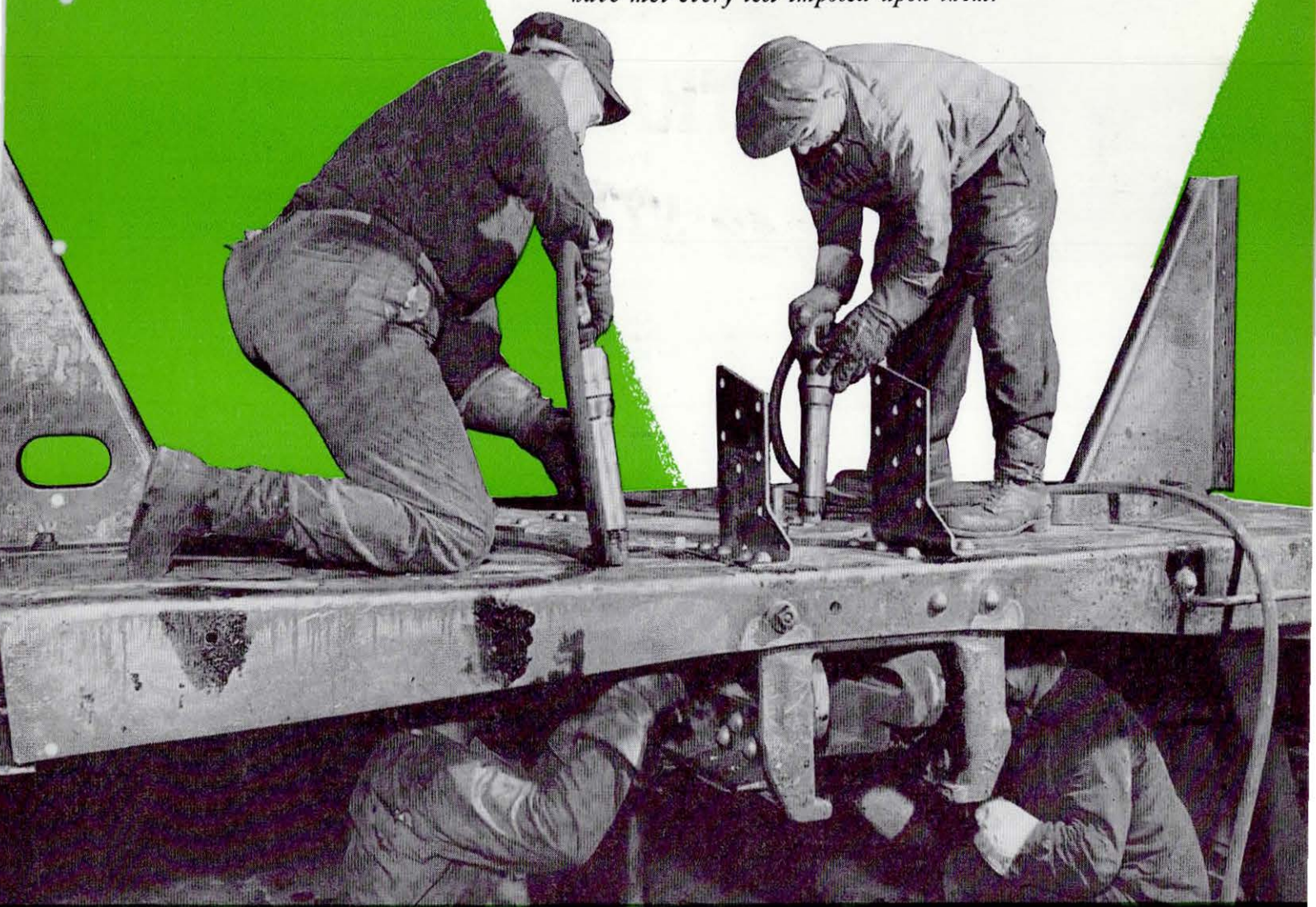
The men in the Pullman-Standard plants have had a remarkable safety record for years—a matter of extreme pride to every member of this organization.

Particularly noteworthy is the fact that during the past seven months, despite greatly enlarged employment, the percentage of accidents has actually gone down—a notable contribution to high morale and output, both so vital at this time.

Safety minded management in this company has always been on the alert to provide safe working conditions and good housekeeping, thus creating a safety spirit which has become infectious throughout the personnel.

★ ★ ★ ★

Pullman-Standard products also *have a record of sturdiness and safety... built into them by "safety-minded" men. They have met every test imposed upon them.*



PULLMAN-STANDARD CAR MANUFACTURING CO.

CHICAGO · NEW YORK · CLEVELAND · WASHINGTON, D. C. · PITTSBURGH · BALTIMORE · BIRMINGHAM · WORCESTER, MASS.

San Francisco Sales Representative, Latham McMullin

There's no time to spare!

KEEP 'EM ROLLING!

Freight cars—particularly tank cars—are vital to Victory. They must be loaded, unloaded, kept moving with all possible speed. Delays cost lives.

Geared up to the Nation's all-out War Effort, General American's vast fleet is working "double time"—thanks to the whole-hearted cooperation of railroads and industry.

Faster "turn around" of freight cars is everyone's responsibility — the railroads, ours, and yours. Keep 'em rolling!

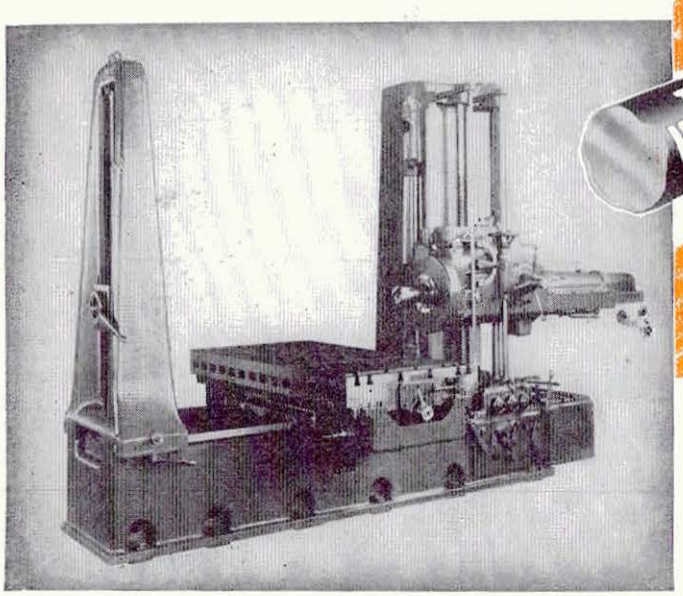
GATX
GENERAL AMERICAN

GENERAL AMERICAN TRANSPORTATION
CORPORATION

Chicago

Builders and Suppliers of Railroad Freight Cars

All Out Production



For the Defense Front

Giddings & Lewis design **precision boring and milling machine,** 5-inch spindle, weight 32,000 lbs., now being turned out in our plant in quantity for direct use in our war industries.

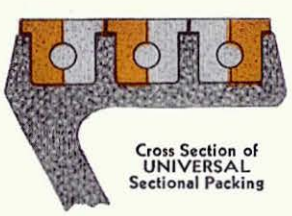
For the Transportation Front

OUR sleeves are rolled up—every facility in our plants is going to be utilized to maximum capacity for the Nation and industry.

Vital machine tools for ordnance production and precision control valves for Navy and Merchant Vessels are rolling swiftly from the assembly floors to the loading platforms.

Naturally we are going to take care of the constantly increasing requirements of the railroads. We are doing everything possible to assure an ample supply of L.F.M. Light Weight Pistons and Combination Sectional Bull Ring Packing.

This is not going to be an easy task because the majority of railroads searching for maximum economies in materials, fuel and maintenance are applying the L.F.M. combination of bronze and iron rings.



Cross Section of
UNIVERSAL
Sectional Packing

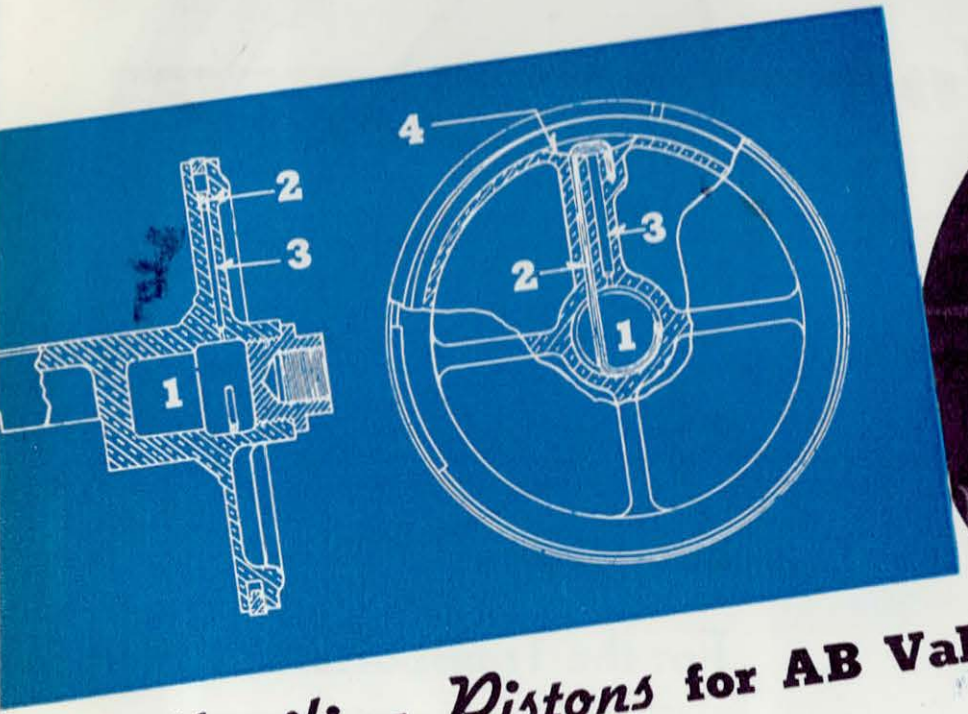
"Pioneers In The Development of the Light Weight Piston and Combination Sectional Packing."
ESTABLISHED 1872

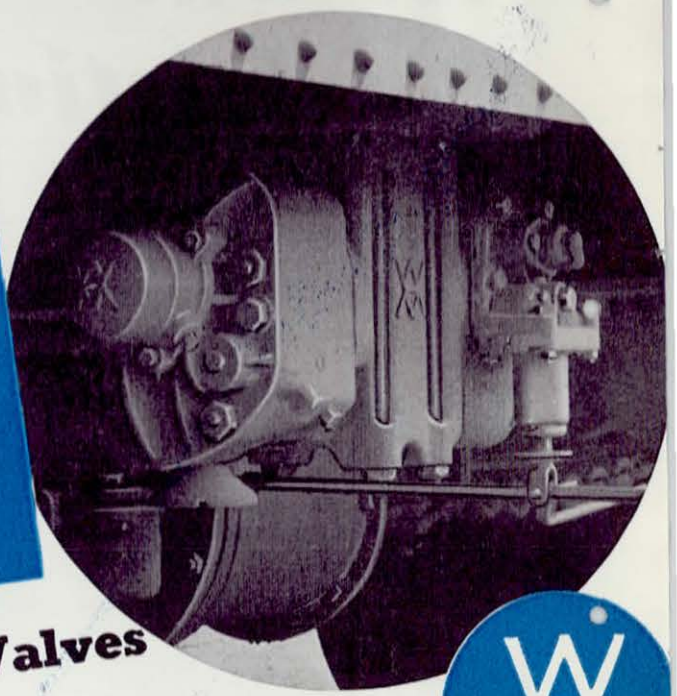
THE LOCOMOTIVE FINISHED MATERIAL CO.
ATCHISON, KANSAS
NEW YORK CITY CHICAGO, ILLINOIS

LFM LIGHT WEIGHT PISTONS *and Combination Sectional* **BULL RING PACKING**

Improved Lubrication...

Extends CONSISTENT SERVICE LIFE





Self-oiling Pistons for AB Valves

HERE'S a lubricating method that's positive, consistent, reliable. Its merits have been demonstrated by exhaustive service trials, and the A. A. R. has sanctioned its general use • Through metered feeding by capillary attraction, and minute air blast, oil is slowly and uniformly dispensed from a supply chamber, within the piston body, to bearing surfaces of the packing ring, piston, and bushing. Consistently good lubrication over the entire period between normal cleaning dates is thus provided to assure maintenance of functional integrity and extend service life of valve parts • This feature is incorporated in both service and emergency pistons, and has been standardized for our entire AB Valve production. Interchangeability is not affected.

1—Chamber, holds sufficient oil for long operating periods.

2—Wire chenille wick, carries oil up to ring groove by capillary attraction.

3—Surge port, provides pressure balance, and permits air jet to distribute oil when the brakes are applied.

4—Local deepening of ring groove provides space for the wick, to keep it from contacting inside of ring and surge port opening.

WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 113 October 31, 1942 No. 18

In This Issue

Page

A Famine Is Imminent in Car Repair Parts ***684***

A leading manufacturer calls attention to the growing shortage of materials necessary for making running repairs to freight cars.

War Problems Dominate Bridge and Building Annual Meeting ***686***

An article reporting on the matters discussed at the recent meeting of this group in Chicago, together with extracts from some of the principal addresses delivered.

What Coal Equivalents Do to Fuel Performance Records ***692***

The Fuel and Traveling Engineers' Committee points out the distorting effect on roads where high percentages of service are performed with oil or electric power.

EDITORIALS

Must the Railways Be Broken Down? 681
Competition in Selling to the Railways 682
Congress Unfairly Impugned 682
Lights 683

GENERAL ARTICLES

A Famine Is Imminent in Car Repair Parts 684
War Problems Dominate Bridge and Building Annual Meeting—Part I 686
The Outlook for Materials for Bridges and Buildings, by D. P. Beach 690
What Coal Equivalents Do to Fuel Performance Records 692
The Santa Fe Aids the War Effort 694
C. T. C. Saves Train Time on the Southern Pacific 697
Australian Railway Builds Own Locomotives 701
Investment Bankers Weigh R. R. Prospects 702

RAILROADS-IN-WAR NEWS **704**

GENERAL NEWS **708**

OPERATING REVENUES AND EXPENSES **718**

FREIGHT OPERATING STATISTICS **719**

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK, N. Y., AND 105 W. ADAMS STREET, CHICAGO, ILL.

WASHINGTON, D. C.: 1081 NATIONAL PRESS BUILDING. CLEVELAND: TERMINAL TOWER. SEATTLE: 1038 HENRY BUILDING. SAN FRANCISCO: 300 MONTGOMERY STREET, ROOMS 805-806. LOS ANGELES: 530 WEST 6th STREET.

SAMUEL O. DUNN, CHAIRMAN. HENRY LEE, PRESIDENT. ROY V. WRIGHT, VICE-PRESIDENT AND SECRETARY. F. H. THOMPSON, E. T. HOWSON, F. C. KOCH, R. E. THAYER, H. A. MORRISON, VICE-PRESIDENTS. J. T. DeMOTT, TREASURER.

SAMUEL O. DUNN, EDITOR. ROY V. WRIGHT, MANAGING EDITOR. ELMER T. HOWSON, WESTERN EDITOR. JAMES G. LYNE, ASS'T TO EDITOR. C. B. PECK, ALFRED G. OEHLER. E. L. WOODWARD J. H. DUNN. D. A. STEEL. R. A. DOSTER. H. C. WILCOX. NEAL D. HOWARD. CHARLES LAYNG. GEORGE E. BOYD. WALTER J. TAFT. M. H. DICK. JOHN S. VREELAND. ARTHUR J. McGINNIS. J. L. STOVER. C. B. TAVENNER. LIBRARIAN; EDITH C. STONE, EDITORIAL ASSISTANT; LOUISE MULLER.

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PAPERS (A. B. P.) AND AUDIT BUREAU OF CIRCULATIONS (A. B. C.).

SUBSCRIPTIONS, INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK, OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR, $6.00; 2 YEARS, $10.00; FOREIGN COUNTRIES, NOT INCLUDING DAILY EDITIONS: 1 YEAR, $8.00; 2 YEARS, $14.00. SINGLE COPIES, 25 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK.

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

PRINTED IN U. S. A.

Now, both Westbound Yards at Portsmouth, Ohio are equipped with "Union" CAR RETARDERS!

Looking West From the East End of the Portsmouth Yard, Showing the Eastbound Empty-Car Yard (Left), the Westbound Coal Receiving Yard (Right Center), and the New Westbound Time-Freight Classification Yard (Upper Right)

From Railway Age August 8, 1942

Large Additions to Yards Which Progress the War Effort

Enlarged and rearranged facilities of the Norfolk & Western at Portsmouth, Ohio, are increasing the efficiency with which the road's many coal and time-freight trains can be handled

... the gateway for the movement of coal traffic west- ... empty cars returning eastward to the coal ... terminal since the main ... west to

IN 1928, the Norfolk and Western placed in service the first car retarder equipped yard to be used exclusively for the classification of loaded coal cars. This yard, the Westbound Coal Classification Yard located at Portsmouth, Ohio, handles the large volume of coal traffic which originates in two of the nation's great coal-producing states, Virginia and West Virginia, and which is destined for the lake ports and central western cities.

IN 1942, the new Westbound Time-Freight Classification Yard at Portsmouth, Ohio, was placed in service. This yard, which is part of the extensive improvements made recently at this important terminal, consolidates the classification work that formerly was done at scattered locations to the east and west of Portsmouth, Ohio. The "Union" Model 31 Electro-Pneumatic Car Retarders installed are now speeding this classification.

2084

UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

DEFERRED MAINTENANCE: The railroads were not given the relief in tax exemption for deferred maintenance which they had sought in the tax bill signed by the President on October 21. The so-called "carry-back" provision, permitting a two-year carry-back of operating losses and excess-profits credits, is designed to afford some relief in this connection. The carriers had hoped for a provision which would qualify as allowable deductions from gross income the deferred maintenance which they charge under the recent I. C. C. order allowing such accruals, provided they are preserved as a true cash reserve available for expenditure when the necessary materials do become available. The carry-back provision does about the same thing, but it applies a two-year time limit. The new law makes the tax on freight rates effective December 1. The tax on passenger fares will be doubled November 1.

●

PERMITS FOR PORT COAL: Railroad shipments of coal destined for transshipment by vessels at ports on lakes Ontario, Erie and Michigan, and at New York, Philadelphia, Baltimore, and Hampton Roads have been put under a permit system to prevent coal piling up at these ports in excess of vessel capacity to take it away. Permit agents at Cleveland, New York and Norfolk will control these coal movements by rail, under I. C. C. service order No. 92.

●

"CONCENTRATION": A high WPB official (Joseph Weiner) announces, as is reported in the news pages herein, that the policy of "concentration" (i. e., squeezing out a large part of the concerns in a business, and centering all production in the few remaining) will probably be applied also to the manufacture of railway materials. In the book, "Last Train from Berlin," by Howard K. Smith (who, incidentally, is a socialist) it is stated that, in Germany, little industries were wiped out on a wholesale scale by Hitler's program of "rationalization"—and that, even by 1939, the number of incorporated businesses in the Reich was only half the number in existence in 1933.

●

BOTTLENECK NO MORE: A 17-mile single-track section of the Southern Pacific has a summit in a tunnel at the middle, and 2.2 per cent grades on both approaches. Passenger trains are restricted to 30 m. p. h. and freight trains to 18. All the freight trains and most of the passenger trains require helper service. Daily train movements average 33 to 36. Obviously, such a set-up has all the characteristics of a bottleneck, and such it has been for many years. By systematic study of movement schedules, and the application of c. t. c., these difficult operating conditions have been greatly ameliorated. An illustrated article in these pages tells how.

●

SANTA FE ON THE JOB: The Santa Fe's freight traffic in the first half of 1942 was almost 56 per cent above 1941; its passenger business was up 88 per cent. Much of this traffic has been military—hence requiring a maximum of supervisory attention. Consultation with governmental authorities on military installations on its lines have made further inroads on officers' attention. How this enormous transportation task has been performed is the subject of an illustrated article elsewhere herein.

●

CONGRESS OR TYRANNY: Congress has been bitterly criticized of late, for alleged lack of capable and responsible membership. An editorial herein cites Clarence Lea as one of a number of Congressmen whose records afford a complete refutation of this indictment. Mr. Lea in his chairmanship of the House Committee on Interstate Commerce has worked tirelessly at a complex job of primary national importance, but which gains him no spectacular headlines and has no appeal to pressure groups or sectional interests. His constituents have done themselves the honor of giving him a vote which approaches nearer and nearer to unanimity. So long as there are legislators like Lea, and constituencies patriotic and intelligent enough to support him, "all-out" strictures against the competence of Congress are obviously untrue and even vicious.

●

INVESTORS LOOK AHEAD: What the investment bankers closest to the railroads foresee in the carriers' future is revealed in the report of the railroad committee of the Investment Bankers Association, published herein. In substance, their view is one of qualified optimism. The country needs virtually all of present railroad capacity, and the only way to retain that capacity is to pay for it. The investment bankers are inclined to discount spectacular claims relative to the amount of traffic the air carriers will divert.

●

AIRLINE CHIEF'S VIEWS: Corroboration for their views of prospective air competition is offered by the investment bankers in the form of a statement by President Patterson of United Air Lines (also published herein). Mr. Patterson believes that the air lines can carry a large volume of freight (compared to what they are now carrying) without greatly injuring railway revenues. Air freight is largely used in war, because, then, cost is not considered—but it *is* an important factor in peace time, and, because of this factor, Mr. Patterson believes, most freight now moving on the surface will continue.

●

B & B THRIFT: How and to what extent it is necessary to economize in b. & b. materials for maintenance, in order that there may be something left over for absolutely necessary new work, is the subject of a paper herein by D. P. Beach of the WPB branch having supervision of these materials. If the *status quo* will last a while longer, let it. If little-used facilities can be commandeered for more useful service elsewhere, then apply them where they will do the most good. Closer and more frequent inspection of bridges will be required if renewals are to be postponed until safety will not permit further delay.

POLITICAL SABOTAGE: Not only are the railroads being denied materials needed to continue the service they must provide for the war program and the essential civilian economy, but *suppliers of the railways also* are having their stocks depleted—by the same short-sighted parsimony which is besetting the railroads. This critically dangerous situation is examined in the leading editorial herein, and, in specific detail, in an article by a manufacturer.

●

CAR PARTS FAMINE: Materials for running repairs to freight cars are the critical danger to which a leading manufacturer directs attention in an article immediately following the editorial comment pages herein. These repair parts are unspectacular and, hence, fail to arouse WPB attention—but when (as threatens soon to happen) every little cross-roads rip-track begins to run short of these minor but essential parts, all the steel in the country cannot *then* prevent a serious tie-up. Possibly this is what the government ownership "planners" are expecting, with zest. Our author does not believe that the inexpert WPB—so zealous to prevent the carriers from getting too much material too soon, rather than mindful of the danger that they may get too little, too late—will do anything about this condition without a lively and factual clamor to waken them.

●

BRAKE ON JUNKING LINES: The practice of tearing up little-used branch lines, and using their materials for war purposes—merely on WPB order and without hearing the claims of objectors—has been discontinued. Hereafter, the ODT is not going to adjudge such lines "non-essential"—thus permitting the WPB to junk them—until it listens to the contentions of objectors. Mr. Eastman has made it clear that an ODT abandonment authorization isn't as good as one from the I. C. C.—maybe the railroads will have to restore some of the lines junked only on ODT authority, after the war is over.

●

FUEL UNIT DISTORTION: Where a large percentage of locomotives are electric or use oil fuel, the "equivalent" units by which their fuel consumption is expressed as coal are not satisfactory for reasonable comparisons of fuel efficiency. The factors entering into this interesting and complex problem are discussed in a study, reported herein, by a committee of the Traveling Engineers Association.

●

UNFETTERED RR TRUCKING: The Missouri Pacific has got some truck certificates from the I. C. C. without the prior-or-subsequent-rail-haul limitation. The commission held that the proposed service was not an invasion of a new field by the carrier, but the substitution of an efficient service for an inefficient one.

●

UP TO BYRNES: The economic director, whose prerogatives seem to have superseded most previous statutes, has been asked by the Mediation Board to decide what the procedure shall now be for the adjudication of railway wage disputes.

PROPER MAINTENANCE
For High Availability
Means Maximum Service!

More than ever before . . .

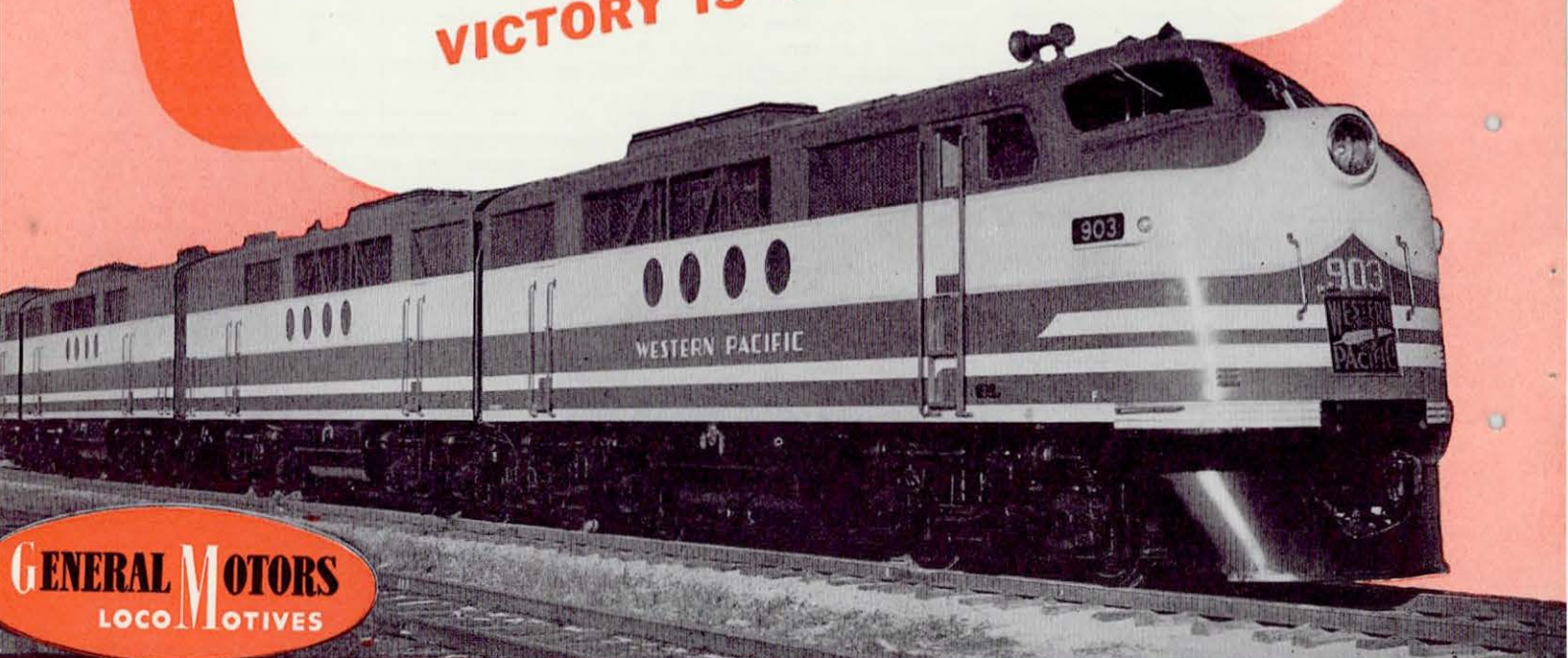
We Must "Keep 'Em Rolling"

— with —

The Right Part . . .
At the Right Place . . .
At the Right Time . . . Properly Applied

because

VICTORY IS OUR BUSINESS



GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION
LA GRANGE, ILLINOIS, U. S. A.

RAILWAY AGE

Efficiency FOR VICTORY

Must the Railways Be Broken Down?

The railways are in serious danger of running short of equipment, and of materials for maintaining their equipment, tracks and other structures, not merely because (1) the government is not letting them get enough equipment and materials, but also (2) because the government is not letting their *suppliers* get enough materials.

The railways are constantly using up the supplies they have in their storehouses, and drawing upon manufacturers for *replacements*. The total materials available for railway use at any given time, therefore, include *both* the stocks that the railways have and the stocks that the manufacturers have.

The *Railway Age* showed last week that, although traffic and service—and consequently wear and tear of equipment and tracks—have been rapidly increasing, deliveries of materials to the railways have been steadily declining since March. Deliveries in July were 9 per cent less than in June; 13 per cent less than in May; 16 per cent less than in April; and 22 per cent less than in March—also, 10 per cent less in July, 1942, than in July, 1941, although freight traffic was 30 per cent and passenger traffic 65 per cent larger.

But this is not the worst of the situation. In an article elsewhere in this issue a railway supply manufacturer emphasizes that manufacturers upon whom the railways are dependent for replacement of their stocks are encountering insuperable difficulties in getting enough materials, and that, consequently, in spite of the decline in their deliveries to the railways, the stocks of manufacturers are declining. "The reason they (railroad officers) fail to see that reserves have been depleted," he says, "is because the greater part of that depletion has taken place in resources which most railroad men never see with their own eyes . . . A real danger is at their very door, and they should do something about it. Once bad-order cars begin to pile up at the thousands of repair points where only a couple of car-maintenance men are stationed . . . there will be more work ahead of them than these scattered men can perform in time to stave off serious congestion."

The increase in freight service rendered by the railways in July, 1942, as compared with July, 1939, just before the war in Europe began was: Per mile of line, 105 per cent; per locomotive, 114 per cent; per freight car, 89 per cent. The increase over July, 1918, (under government operation), was: Per mile of line, 55 per cent; per locomotive, 120 per cent; per freight car, 89 per cent. In the ten years ending with 1918 the railways acquired averages of about 2,800 new locomotives and 105,000 new freight cars annually; in the ten years ending with 1942, averages of only about 365 new locomotives and of only about 38,300 new freight cars annually. Consequently, the average age of locomotives and cars during the present war period is much greater than it was during the last war period; and this—together with the much greater service being rendered—more imperatively requires materials for maintenance and repairs.

As the manufacturer-author of the article appearing elsewhere in this issue says, "It is our nation's vital system of supply which is at stake . . . Will the railroad industry"—[he might better have addressed this question to the public and War Production Board]—"be content to wait until a breakdown occurs, and then see the Federal Administration . . . apply directives which cannot then avoid great injury to the war effort? . . . The demagogues will have another specious talking point for government ownership, and the fight for private operation may have been lost by default."

Competition in Selling to the Railways

This paper emphasized recently* the necessity for enough of the *right kinds* of competition in improving equipment, devices and materials for railway use, and in sales and advertising activities presenting to railway officers all the available products that will help them increase efficiency and economy. In the post-war period, because of renewed competition by other carriers, and of wages increased during the war which it will be difficult to reduce, the railways will require every possible means and method for improving their service and curtailing its cost. They and manufacturers for them were not very successful in meeting the competition of other carriers and manufacturers for them before the war. Only intense competition of the *right kinds* among manufacturers will cause and enable them to give the railways adequate help.

There is no better measure of the *right kinds* of competition within any industry or branch of it than its advertising. For virtually every company with a good new product, or a real improvement in an old one, extensively advertises it. And when companies supposed to be actively competing curtail their advertising or do not advertise when there is a large market, this is usually because they have nothing new or improved to sell, and are trying to divide the market on terms satisfactory to themselves.

The trend of advertising by the railway equipment and supply industry, and by different branches of it, merits study in this connection. When purchases of equipment and materials declined 80 per cent between 1929 and 1932-1933, advertising by the supply industry naturally declined 60 per cent. When advertising budgets for 1941 were made, government restrictions on materials for railways had not been imposed; and railway purchases were only 10 per cent less in 1941 than in 1929. There had occurred meantime an increase in advertising of new and improved products. But the total advertising addressed to the railway industry in 1941 was 40 per cent less than in 1929, and in 1941 and 1942 combined will be 36 per cent less than in 1929 and 1930 combined, although railway purchases will be larger.

Statistical investigation shows there has been a decline of 12½ per cent in advertising for railway business traceable to consolidations of supply companies; of 7½ per cent due to companies going out of business or leaving the field; and of 29 per cent due to other causes. These other causes prominently include "reciprocal buying" and other practices not conducive to technological progress on the railroads.

A recent pamphlet of the government's National Resources Planning Board says: "Post-war planning is by no means the task of governments *alone,* but *also* the opportunity and responsibility of private enterprise." Note the subordination of private enterprise. This same board is edging closer and closer to advocacy of government ownership on the theory that private enterprise in railroading cannot be continued after the war.

Only manufacturers for railways who compete to the utmost during and after the war in developing and selling to the railways what they will imperatively need to increase efficiency and economy will contribute toward maintaining private enterprise after the war in the railroad industry, their own industry, or any other industry.

(*) "Post-War Competition," issue of October 17, page 599.

Congress Unfairly Impugned

Congress has recently been the target for the imprecations of superficial critics—mostly those who do not think it nimble enough in jumping through the hoop when the New Deal ringmasters crack their whips. Congress is a human institution, and hence far from perfect—but, being close to the people where they really live, comes much closer to representing America than does the Administration, most of the minions of which, luckily for them, never have had to submit their actions or personalities to public approval.

The detractors of Congress ought to explain how an institution can be so decadent as they say it is, when it contains such men—to cite one example—as Clarence Lea, chairman of the House Committee on Interstate Commerce. Mr. Lea has served for thirteen consecutive terms, and has been renominated for another term by both major political parties. In his district (in California) there are eleven counties, and in the primaries Mr. Lea won the Democratic nomination by a majority vote in every county. He won the Republican nomination by carrying all but one of the eleven counties, and in the one he lost his rival had a plurality of but four votes.

Mr. Lea is no mere Washington representative of local interests. His work as chairman of the Interstate Commerce Committee has been singularly exempt from concern over sectional interests. He has devoted himself to study of and action on transportation problems of the utmost complexity, the results of which are of the greatest importance to the nation as a whole but have little appeal to sectional or other pressure groups.

Character, ability and patriotic devotion to duties which, while unspectacular, are of vital national importance, have constituted the record he has presented to his constituency; and it has done itself the honor of giving him steadily increasing endorsement as his merits have become better and more widely understood.

We do not praise Congressman Lea because he has "done something for the railroads." He has done

nothing for them, as a particular segment of the economy. But he *has* considered their problems—and equally those of other agencies of transportation—as they are related to the *national interest*. That is all the consideration that any group or sectional interest can fairly or patriotically ask of a legislator; and it is because *the people themselves* have too frequently chosen pressure-group puppets instead of representatives of character that some degree of plausibility is given to reckless statements belittling Congress.

Liberty will be gone when the powers of Congress are taken over by unelected Administration officialdom. So long, however, as even a few constituencies will send men like Mr. Lea (and there are others like him) to Congress, wholesale criticism of that body should fall on stony ground. If such criticism inspires Congressmen to more resolutely patriotic behavior—as it should—its result may be precisely the opposite of that intended by the critics.

Lights

In a recent issue of *Railway Age,* mention was made of how light can be "salvaged" by painting walls, ceilings, floors and machine parts in light, appropriately contrasting colors.

But, some say, "How about those places that are always black?" One answer is that there are white blacksmith shops in railroad service and that many black places might well use paint.

When all factors are included, first consideration must be given to the light source. When a lighting unit is allowed to become dirty two things happen. First, the light is stopped by the dirt and, second, the reflecting qualities of the unit are changed. For example, the efficiency of an aluminum, high-bay reflector was reduced 42 per cent by dirt and the candle power was reduced to 66 per cent because the distribution was changed. Illumination on the working plane was reduced about 48 per cent.

The light output of industrial lighting units depreciates at rates varying from 4 to 20 per cent per month, many railroad installations approaching and sometimes passing the higher figure. With a 20 per cent per month depreciation and with average power and labor costs, it pays, in dollars per candle power hour, to wash reflectors once in three weeks. When the depreciation rate is 8 per cent the balance between cleaning costs and wasted power costs indicates a four-week cleaning period, and when depreciation is 4 per cent the period is 6 weeks.

The next thing of importance is to make sure that the lamp in each socket is the right size and has the correct voltage rating. A wrong size lamp upsets the value of the reflector and a lamp with the wrong voltage rating is either inefficient or has short life. One western road saved the salary of a man several times over simply by having him check lamp sizes and socket voltages, making corrections when necessary. This is now of added importance since the simplification of lamp schedules has reduced the number of sizes and voltage ratings of lamps.

A regular program of lighting fixture cleaning and maintenance should be adopted. Clean units do not depreciate as fast as dirty ones and are more efficient. Cleaning, which can be performed by unskilled labor, conserves both critical materials and power.

* * *

What's So Shameful in the "Profit Motive"?

"In a recent letter to The Times of London, L. P. Jacks, the former Principal of Manchester College, Oxford, expresses a bewilderment which may well have overtaken many on this side of the ocean as well. It would be helpful, he suggests, if an expert in the matter would explain the difference, from the Christian, moral and psychological points of view, between the profit motive, on the one hand, and (1) the salary motive and (2) the wages motive on the other.

"If the private profit motive is anti-social because it is private and not public or communal, asks Mr. Jacks, are the salary and wages motives less private and therefore less anti-social? Are we to understand that a man is acting against the interests of the community by seeking to increase his private profits from 4 to 5 per cent, but for the interests of the community when he demands a rise of his private salary from $2,000 to $2,500 a year, or of his private wages from $40 to $50 a week?

"This, thinks Mr. Jacks, would be strange. Or shall we say that profit-making is wrong because profit-makers are rich and by nature greedy and money-loving, while salary receivers and wage-earners are poor and by nature generous and money-despising? That, thinks Mr. Jacks, would be grossly untrue.

"Until it can be otherwise explained to him, he is prepared to assume that the private profit motive, the private salary motive and the private wages motive are three names for the same motive in different modes of operation, all concerned with what is commonly known as 'money-making' and equally social (or anti-social) under one name as under another. Nor is it clear to him that the cause of Christian morality would be advanced by suppressing the motive under its first name while leaving it to operate at large under the second and third.

"The effect, he thinks, might conceivably be the opposite, and certainly would be if the process of suppressing private profits involved the creation of a vast multitude of salaried officials (as it now seems to be doing) by no means indifferent to a rise in their salary and favorably placed for getting it.

"Of the three forms in which the motive operates, the salary form, he suspects, is probably at the moment the most fraught with danger to the public interest.

"But the wages form has its dangers too. Mr. Jacks writes that he has yet to learn of a trade union opposing a rise of wages on the ground that it would be inimical to the general interests of the whole community—which conceivably it might well be. Pending further light in the matter Mr. Jacks suggests that all three forms of the money-making motive abstain from abusing each other. It is an admirable suggestion."

—From the New York Times.

A Famine Is Imminent

in Car Repair Parts

By a Railway Supply Manufacturer

THE procurement of critical materials is of course difficult under war conditions, but all kinds of car materials do not encounter the same degree of difficulty. Needs for car materials which are critically scarce and therefore dispensed under strict allotment rules, are almost certain to obtain reasonable consideration in the very routine processes of allotment practice. Likewise, specific numbers of cars to be built or to receive heavy repairs, can be and are handled as definite and major problems. The amount of material involved in such a project is closely provable. If delays occur, there are physical evidences of it before the eyes of the authorities, in the shape of idle plant and unemployed men. There is very little likelihood that such delays on definite large projects will ripen into serious damage.

Running Repairs—Vital But Not Spectacular

But the forgotten child of the whole priority set-up, so far as concerns the overburdened freight-car, is the material which is indispensable for running repairs. To care for this situation in less serious periods of the past, the railroads have stocked hundreds of items of material at thousands of repair points all over the country. These parts, which fail with little more notice than trouble under an automobile hood, are largely made of steel. Most of them are component parts of the trucks or the brake equipment.

Perhaps one reason that running repairs are so lightly considered in the W.P.B., is the fact that these repairs are performed at so many out-of-the-way places that the job fails to advertise its great importance as effectively as do concentrated construction and reconstruction projects. Moreover, it is difficult to gather statistics and deal with a problem that is spread so thinly over the nation. On the other hand, there are reasons rooted in the Priorities System, itself, which must not longer escape constructive criticism. It is our nation's vital service of supply which is at stake.

Priorities Just Short of Good Enough

From the outset, priorities allotted to the railroads and their suppliers have been just short of the level necessary to procure the required steel from the mills. When they were awarded A-3 priority, an A-1-k priority was necessary. When they were given A-1-j and A-1-c, the steel mills were requiring A-1-a ratings. They had no sooner been given A-1-a when the Double A series was invented and took all the steel for the Armed Services. Recently they have had some AA-2-x but now practically nothing but AA-1 will procure the steel which is wearing out, every hour, on their trucks and brake rigging. During this will-o'the-wisp period, there have been many statements from Washington that the Priorities System was undergoing rejuvenation and improvement—that a comprehensive allocation system would emerge to replace it. No such improvement or change has materialized.

The present system commendably strives for the essential virtue of giving preference to the Armed Services and ocean transport. However, it does this in a chaotic manner by inflating its own currency, creating new preference ratings at the top for the Army and Navy. This happens whenever the services seem to have been crowded by liberal or perhaps reckless priority awards to civilian enterprises. In doing this, the present system and its administrators fail to recognize transportation as anything more than another civilian service. When we ask anyone in the Army, Navy or W.P.B., they assure us that the railroads are of supreme importance; the more so because they must gradually take over most of the service of rubber-tired vehicles; and also because practically all arms, munitions and other war supplies must, at one or a dozen stages, be carried by rail transportation. But the acknowledgment ends with this lip service. As Mr. Eastman has said, in substance, many people apparently revere the railroads so much that they believe them capable of the miracle of operating indefinitely without any assistance whatsoever.

Remedies When They Are Too Late

Mr. Eastman has also said in speeches and writings that he fears a break-down resulting from under-maintenance. He has practically said that he is powerless to maintain his position with respect to new equipment or equipment repairs. Will the railroad industry be content to wait until this break-down occurs and then see the Federal Administration come in and apply belated restoratives in the form of directives which cannot then avoid great injury to the war effort? If that happens, the demagogues will have another specious but simple talking point for government ownership, and the fight for private operation may have been lost, by default.

The big concern at Washington has been to cut down the railroad inventories. Many roads admit that they had shelves pretty well stocked when the emergency came upon the country. Thus, by cutting off effective priorities and making the roads transfer items of material from overstocked points to the spots where the materials are needed, considerable progress has been made toward this end. However, bleeding a patient may be an excellent idea but the bleeder must have some definite knowledge and plan about when to stop. In the case of running repairs to trucks and brake rigging, we believe no one has taken the fundamental step of finding out what is the necessary amount of steel per thousand car-miles needed by the railroads for this purpose, forgetting for the moment the question of inventories. This is information that some one can and must closely approximate before the W.P.B., can consistently be asked to do anything outside of the present "trust-to-luck"

system, in the matter of insuring safe and continuous daily operation of our freight trains.

Protective Stocks Are Vanishing

Some railroad men do not seem to sense that stocks are becoming exhausted. Reserve supplies for the railroads consist not only of the stocks on their own shelves but also of the stocks in their suppliers' warehouses and steel storage yards. These stocks of the suppliers were also in robust condition in the middle of 1941. Suppliers' stocks dwindled in late '41 and early '42, but the railroads did not begin to sense the approach of any serious shortage because new freight-car construction was frozen early in April, and thus another reservoir of these same truck and brake-rigging materials was made available for current maintenance purposes. But notwithstanding this lucky transfusion, the current Priorities System has interrupted replacement buying by the suppliers and the bleeding of protective stocks is again approaching the danger point.

Railroads whose stocks were low enough to warrant replacing some of the weakest items, have ordered from their suppliers. The priority offered by the railroad was not good enough to procure steel from the mill; and it was not good enough for the supplier to replace his steel by ordering on the mill. But the supplier shipped out of his stocks, nevertheless, and his stocks are sorely depleted at the present time. Thus, some railroads may believe it is easier to get repair materials than is actually the case. The reason they fail to see that reserves have been depleted is because the greater part of that depletion has taken place in resources which most railroad men never see with their own eyes. To be sure, their own stocks are also at a lower level but, so far, they have been able to buy steel parts from their suppliers. Both the railroads and the suppliers have been too silent. A real danger is at their very door, and they should do something about it. Once bad-order cars begin to pile up at the thousands of repair points where only a couple of car-maintenance men are stationed, there will be no catching up on the repair work, even though the stocks of the U. S. Steel Corporation were available to the railroads. There will be more work ahead of them than these scattered men can perform in time to stave off serious congestion. The railroads have few men who can be called to supplement these efforts. A tie-up due to minor bad-order difficulties can grow to enormous proportions in a very short time, as any railroad operating man will bear witness. Mr. Eastman has stated this flatly. He said that there is a danger that somebody may skimp the amount of materials allotted for railroad maintenance and he has also said: "The railroad plant is being worked at top speed under heavy pressure. It can crack up quickly and badly, once its condition is allowed to run down."

Make a Quick Survey of the Need

As a first step, there should be a quick survey of materials and parts needed for these vital running repairs to trucks and brake equipment. This can be reduced to per car per annum, or per thousand car-miles, or some such basis. After making sure that it is reasonable, it should be demanded as an industry allocation, for the good of the country. Someone must be just as insistent upon getting what the railroads need for service to the country as others have been in behalf of Organized Labor and the Armed Services. The obligation rests upon the industry as a whole, which can only mean the A.A.R. They represent the best-informed element in the country on this subject.

Most civilian requirements are not such that excessive starvation cannot be remedied after they begin to hurt badly. Many railroad needs are in that same category and others will be taken care of because imminent danger is so manifest and provable in those cases. It is the hidden and intricate but vast system that feeds materials to the running gear of our freight cars which is most likely to fall to pieces without warning, too late to build up widespread stocks and quickly recover operating efficiency. The matter has already been allowed to run so far that men are drifting away from the manufacturers who are depended upon to supply these parts to the railroads. Before long, these manufacturers will not be able to respond to a call for help, even though the necessary steel be delivered to them with the order.

Precautions Are All Against Oversupply

In the W.P.B., every precaution has apparently been taken to see that the railroads do not get too much car-maintenance steel, too soon, but nobody has taken any precaution to guard against their getting too little, too late. There will still be some one who will fear to give the railroad any latitude in ordering steel parts. They feel that every requisition, before it is aided with an effective priority, must come down to Washington merely to be examined by inexpert eyes. They forget that they can more simply enforce economy of inventory by using their punitive powers, promulgating definite and reasonable limitations and then insisting upon them. They forget that the very ease with which running repair material could be obtained under a special preference order, would almost by itself control such inventories. Men do not hoard the things which they know they can get on demand. If protection for railroad operation can be obtained on some such moderate but definite basis, the idea would be to distribute the allocation to the separate railroads on something like a thousand car-mile basis and to provide in Railroad Order P-88 that a high priority shall attach to such orders.

Most of these suppliers of parts are subject to the PRP methods of regulating priorities. This plan takes a railroad priority, together with those coming from other customers, and puts them through a tabulation scheme which produces a synthetic priority rating for the manufacturer. This method can usually be counted upon to defeat the use by the supplier of any top-grade priority which may come in to him on a railroad order. If railroad maintenance for trucks and brake rigging gets the priority which its importance warrants, it will be a practical necessity to make such priority extendable for direct materials, without making it go through the PRP synthetic priority machine, even though the manufacturer may be operating under a PRP certificate.

Also, the materials and parts bought for these vital day-to-day repairs, on this proposed special rating, should not be usable in supply projects for new and rebuilt cars. Material for projects should always be purchased as a part of the project directive except in special cases where the user would get definite approval by showing that short-term borrowing of such material would not endanger the current maintenance needs of the railroads. Under the present set-up, if new cars have a superior rating, suppliers are legally required to deplete the stocks which they have procured to protect the railroads' most vulnerable operating spot, to wit, running repairs to the overloaded cars which are carrying the war supplies for the world.

a discussion of the major problems confronting the railways and of their part in the country's war effort. In this latter regard he said, in part, as follows:

"Our meeting here today can be attributed to the fact that your officers felt that such a meeting would be of help to our national war offensive. Transportation, from the very beginning, has been an essential adjunct to successful warfare—be it offensive or defensive. The railroads are by far the most dependable and satisfactory of all forms of transportation, and it is clear that we must keep them functioning properly to achieve our objective of winning the war.

"Today, our railroads are faced with the task of handling the largest tonnage they have ever carried, and it must be done with less manpower, equipment and materials. The year 1942 will be a peak year in the production of heavy supplies of war, and we have been told that the goal of production in 1943 will be revised upward. On top of all this, our competitors in the transportation field will be handling less. Therefore, it is now up to us to show what we can do.

"A recent public opinion survey made for the Association of American Railroads developed that the public fully expects the railroads to handle the transportation load, even though peak is piled upon peak. It will be a sorry day for us if we do not measure up to this confidence.

"As railway officers, we are entering a period of unusual opportunity to exercise our ingenuity for maintaining our facilities in the face of a limited supply of labor and materials. Also, as railway officers, we have already felt the loss of some of our valuable foremen and workers to the military services and to other more lucrative occupations. We cannot stay the arm of the military when it selects our men, but we can retain for the railways those men with initiative and ability who will be leaving for work elsewhere if not given greater reward and responsibility.

"As employees, we should have faith and confidence in our superior officers and those in other departments. We should believe, for example, that our purchasing and stores officers are doing their best to secure the necessary materials for us, and that they, too, are limited as to what can be done. Also, as employees, we can help in the national scrap campaign. Yet, in our enthusiasm in this regard, we should not cast into the scrap heap those materials that can be rehabilitated. To do so, we might create a situation that calls for new materials."

Johnston on War Problems

Opening the meeting, C. E. Johnston, chairman, Western Association of Railroad Executives, and associate director, Western region, ODT, Chicago, speaking on the Problems That Confront Us, saw as the foremost problem of the nation and the railroads, the problem of winning the war—a goal that, he said, must be achieved in the face of unprecedented traffic demands and shortages in both materials and manpower. The days ahead will put the railroads to the acid test, he said, but he expressed full confidence in railway men to do their part, and in the railways, given their essential minimum requirements, to meet all demands that will be made upon them. He said, in part, as follows:

"To win this war—that is our one great problem. And to the satisfactory solution of that problem we must dedicate our hands, our minds, our hearts and our souls. Until we are able to solve that problem, all others are less disturbing.

"In our great national production line, the railways, as usual, are the main line of transportation—the main line over which must move, in ever-growing volume, the raw materials from mine and forest and field to factory; the main line, too, over which the finished products of tanks and guns and shells must flow unceasingly from our factories to the fighting fronts throughout the world. We are the lines behind the lines—the service of supply of an embattled nation.

"Today, the War department is by far the largest user in the country of railroad transportation service, both freight and passenger. In the nine-month period beginning December 7, 1941, troop movements by rail totaled approximately 6,500,000, as compared with 1,900,000 during the first nine months of the last war. Then, too, these troops are moving with greater speed and comfort than was the case 25 years ago. In 1917, the average speed of special troop trains was less than 25 m. p. h., compared with an average speed today of 30 m. p. h.

"Next to the army, the navy is the largest user of rail facilities in time of war. Thousands of freight cars are moving daily in the direct service of our sea forces. The Naval Bureau of Supplies and Accounts alone routes an average of approximately 50,000 freight cars a month, and this does not include shipments under private bills of lading going to plants engaged in fulfilling navy contracts.

"Not only must our soldiers and sailors be armed and equipped —they must be fed, as well. The American railroads are moving record quantities of food for our army and our navy. It takes about twice as much food to feed a man in uniform as it does a civilian. To feed our army and navy requires about 3,500 carloads of foodstuffs each week. In addition, we are shipping enormous quantities of food to our allies and practically all of this is moved to ports by rail.

"Only by surpassing all previous records of operating efficiency in the use of equipment has it been possible for the railroads to meet the unprecedented demands that have been made upon them. But there is a limit to such accomplishments. The railways must have additional equipment to match, in some degree, the increase in the demand for transportation service. This is another of the problems which now confront us—and a problem that also must be met successfully. And still other major problems confronting us are the problems of shortage—in manpower and materials.

"We are convinced that our task of winning the war will be the greatest and the most difficult we have ever known. It will be even greater and more difficult tomorrow than it is today. Your part in the struggle—the safe and adequate maintenance of the railroad track structure, bridges and other essential facilities, is second to none in importance. You have had a part in making the American railroads the best in the world. I am sure that you will maintain this record."

Ralph Budd Calls for Post-War Planning

Speaking before an audience of nearly 300 at the annual association luncheon on Wednesday, Ralph Budd, president of the Burlington system, urged all-out effort on the part of railway men in the prosecution of the war. At the same time, he cautioned that some consideration should be given now to the post-war place of private enterprise in our society, to avoid chaos and a situation in which it will be necessary for the government to bridge the gap with huge expenditures for federal work. He said, in part, as follows:

"During the present war, the railroads are a favored group. We are favored because we are engaged in a business which is very definitely a part of the war activities, and never should be thought of as apart from them. But, as so often happens, the privilege and favor we enjoy carries with it a very great responsibility, to make sure that everything we do contributes the utmost to the war effort.

"We should keep always before us this motto—'Do today the most that can be done to contribute to the war effort.' And I think that this test is one which should be applied not only to all members of the railroad fraternity, but to all members of the government staffs dealing with the railroad fraternity as well.

"There are two general problems that confront railway officers such as are here today. I am sure that you are considering both of them very earnestly here. One is the greatest care in the use of those materials which have become scarce; the use

system, in the matter of insuring safe and continuous daily operation of our freight trains.

Protective Stocks Are Vanishing

Some railroad men do not seem to sense that stocks are becoming exhausted. Reserve supplies for the railroads consist not only of the stocks on their own shelves but also of the stocks in their suppliers' warehouses and steel storage yards. These stocks of the suppliers were also in robust condition in the middle of 1941. Suppliers' stocks dwindled in late '41 and early '42, but the railroads did not begin to sense the approach of any serious shortage because new freight-car construction was frozen early in April, and thus another reservoir of these same truck and brake-rigging materials was made available for current maintenance purposes. But notwithstanding this lucky transfusion, the current Priorities System has interrupted replacement buying by the suppliers and the bleeding of protective stocks is again approaching the danger point.

Railroads whose stocks were low enough to warrant replacing some of the weakest items, have ordered from their suppliers. The priority offered by the railroad was not good enough to procure steel from the mill; and it was not good enough for the supplier to replace his steel by ordering on the mill. But the supplier shipped out of his stocks, nevertheless, and his stocks are sorely depleted at the present time. Thus, some railroads may believe it is easier to get repair materials than is actually the case. The reason they fail to see that reserves have been depleted is because the greater part of that depletion has taken place in resources which most railroad men never see with their own eyes. To be sure, their own stocks are also at a lower level but, so far, they have been able to buy steel parts from their suppliers. Both the railroads and the suppliers have been too silent. A real danger is at their very door, and they should do something about it. Once bad-order cars begin to pile up at the thousands of repair points where only a couple of car-maintenance men are stationed, there will be no catching up on the repair work, even though the stocks of the U. S. Steel Corporation were available to the railroads. There will be more work ahead of them than these scattered men can perform in time to stave off serious congestion. The railroads have few men who can be called to supplement these efforts. A tie-up due to minor bad-order difficulties can grow to enormous proportions in a very short time, as any railroad operating man will bear witness. Mr. Eastman has stated this flatly. He said that there is a danger that somebody may skimp the amount of materials allotted for railroad maintenance and he has also said: "The railroad plant is being worked at top speed under heavy pressure. It can crack up quickly and badly, once its condition is allowed to run down."

Make a Quick Survey of the Need

As a first step, there should be a quick survey of materials and parts needed for these vital running repairs to trucks and brake equipment. This can be reduced to per car per annum, or per thousand car-miles, or some such basis. After making sure that it is reasonable, it should be demanded as an industry allocation, for the good of the country. Someone must be just as insistent upon getting what the railroads need for service to the country as others have been in behalf of Organized Labor and the Armed Services. The obligation rests upon the industry as a whole, which can only mean the A.A.R. They represent the best-informed element in the country on this subject.

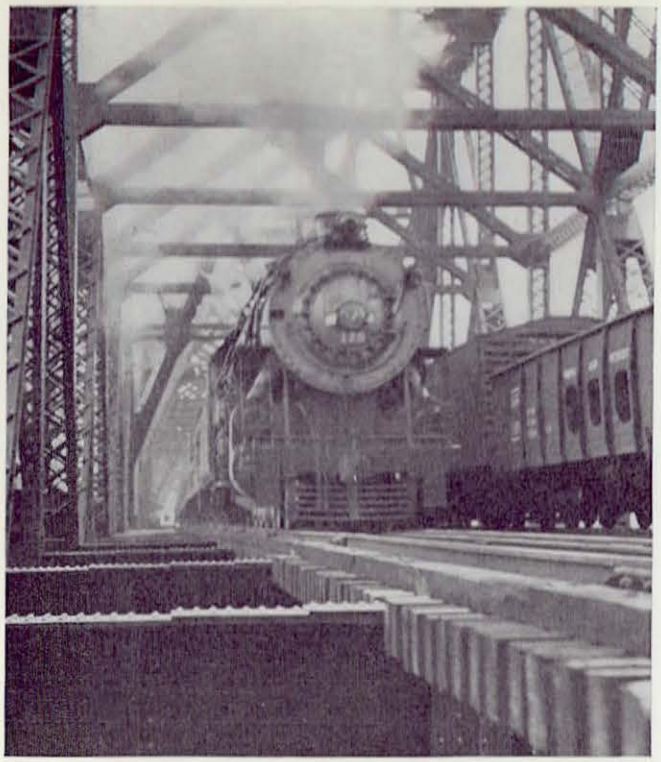
Most civilian requirements are not such that excessive starvation cannot be remedied after they begin to hurt badly. Many railroad needs are in that same category and others will be taken care of because imminent danger is so manifest and provable in those cases. It is the hidden and intricate but vast system that feeds materials to the running gear of our freight cars which is most likely to fall to pieces without warning, too late to build up widespread stocks and quickly recover operating efficiency. The matter has already been allowed to run so far that men are drifting away from the manufacturers who are depended upon to supply these parts to the railroads. Before long, these manufacturers will not be able to respond to a call for help, even though the necessary steel be delivered to them with the order.

Precautions Are All Against Oversupply

In the W.P.B., every precaution has apparently been taken to see that the railroads do not get too much car-maintenance steel, too soon, but nobody has taken any precaution to guard against their getting too little, too late. There will still be some one who will fear to give the railroad any latitude in ordering steel parts. They feel that every requisition, before it is aided with an effective priority, must come down to Washington merely to be examined by inexpert eyes. They forget that they can more simply enforce economy of inventory by using their punitive powers, promulgating definite and reasonable limitations and then insisting upon them. They forget that the very ease with which running repair material could be obtained under a special preference order, would almost by itself control such inventories. Men do not hoard the things which they know they can get on demand. If protection for railroad operation can be obtained on some such moderate but definite basis, the idea would be to distribute the allocation to the separate railroads on something like a thousand car-mile basis and to provide in Railroad Order P-88 that a high priority shall attach to such orders.

Most of these suppliers of parts are subject to the PRP methods of regulating priorities. This plan takes a railroad priority, together with those coming from other customers, and puts them through a tabulation scheme which produces a synthetic priority rating for the manufacturer. This method can usually be counted upon to defeat the use by the supplier of any top-grade priority which may come in to him on a railroad order. If railroad maintenance for trucks and brake rigging gets the priority which its importance warrants, it will be a practical necessity to make such priority extendable for direct materials, without making it go through the PRP synthetic priority machine, even though the manufacturer may be operating under a PRP certificate.

Also, the materials and parts bought for these vital day-to-day repairs, on this proposed special rating, should not be usable in supply projects for new and rebuilt cars. Material for projects should always be purchased as a part of the project directive except in special cases where the user would get definite approval by showing that short-term borrowing of such material would not endanger the current maintenance needs of the railroads. Under the present set-up, if new cars have a superior rating, suppliers are legally required to deplete the stocks which they have procured to protect the railroads' most vulnerable operating spot, to wit, running repairs to the overloaded cars which are carrying the war supplies for the world.



War Problems Dominate

Bridge and Building Annual Meeting

Part I

Members hear representatives of the WPB, ODT and AAR, and consider eight committee reports in a crowded program tuned closely to the all-out effort being made by the railways

WITH an intensive program tuned throughout to the war-time problems confronting them, members of the American Railway Bridge and Building Association met in Chicago on October 20-22, seeking every expedient, through their own efforts and cooperation with others, to advance the war effort of the railways and of the country as a whole. Among the many subjects considered were the protection of railway structures, protective and blackout lighting, meeting the labor problem, the conservation and reclamation of materials, and reducing demands for cars in company services—the speakers including Edwin M. Fitch, assistant director, Division of Transport Personnel, Office of Defense Transportation, Washington, D. C.; David P. Beach, assistant chief, Maintenance Equipment section, War Production Board, Washington, D. C.; and W. D. Beck, district manager, Car Service Division, Association of American Railroads, Chicago. A special feature of the meeting was the annual luncheon of the association on Wednesday, which was addressed by Ralph Budd, president of the Chicago, Burlington & Quincy system.

The meeting, which was held at the Hotel Sherman, was opened with an address by C. E. Johnston, chairman, Western Association of Railway Executives, and associate director, Western region, Office of Defense Transportation, Chicago, who laid the framework for the entire program in a review of the problems confronting the railways, followed by constructive suggestions and a challenge to bridge and building men to dedicate their every act to the problem of winning the war. Addressing the group on Wednesday morning, Mr. Fitch discussed The Outlook for Labor in Bridge, Building and Water Service. Speaking on the afternoon of the same day, Mr. Beach discussed Critical Materials in Wartime for Bridge, Building and Water Service Work. On Thursday, Mr. Beck spoke on Reducing Demands for Cars and Locomotives for Handling Bridge, Building and Water Service Materals in a Period of Maximum Traffic.

Others who addressed the meeting were B. R. Kulp, chief engineer, Chicago & North Western, Chicago, who spoke on The Protection of Railway Structures in Time of War; R. P. Hart, bridge engineer, Missouri Pacific, St. Louis, Mo., who discussed the Possibilities for Reclamation and Salvage; and J. B. Hunley, engineer of structures, New York Central, Lines West of Buffalo, Chicago—O. G. Wilbur, appraisal engineer, and until recently, field engineer, Building department, Baltimore & Ohio, Baltimore, Md.—and G. E. Martin, superintendent of water service, Illinois Central, Chicago,—who joined in a symposium with Mr. Beach on Wednesday, discussing What We Can Do to Meet the Material Situation. Still others who addressed the meeting were W. G. Darley, illuminating engineer, Lamp department, General Electric Company, who, at a special session on Tuesday night, with the aid of slides and an array of lighting equipment, discussed The Problems of Protective and Blackout Lighting; and A. E. Bechtelheimer, bridge engineer, Chicago & North Western, who, at the closing session, summarized the many constructive ideas developed during the course of the meeting.

All of the addresses mentioned in the foregoing were woven into a program framework consisting of the reports of eight technical committees on the following subjects; Preventing Accidents Among Bridge and Building Employees; The Cleaning of Masoury Structures; Meet-

ing the Demands for Increased Water Supplies in Fast Freight Service; Wearing Surfaces for Building Floors, Platforms and Roadways; The Conservation of Bridge, Building and Water Service Supplies; Rail Fastenings on Bridges, Pits and Turntables; The Repair of Steel Bridges; and Piles and Pile Driving.

Lending their support to the meeting, four committees of the American Railway Engineering Association, with related interests, and the Executive committee of the American Wood-Preservers' Association, met in Chicago concurrent with the meeting attended certain of its sessions. All of the sessions were presided over by R. E. Dove, president of the association, and assistant engineer, Chicago, Milwaukee, St. Paul & Pacific, Chicago. Three hundred and twenty-three men registered their attendance, including 190 railroad men.

New Officers

At the closing session of the meeting, G. S. Crites, division engineer, Baltimore & Ohio, Punxsutawney, Pa., was advanced from second vice-president to president; R. E. Caudle, assistant engineer of structures, Missouri Pacific Line, Houston, Texas, and a director of the association, was elected first vice-president; A. M. Knowles, assistant engineer of structures, Erie, Cleveland, Ohio, was advanced from third vice-president to second vice-president; Neal D. Howard, engineering editor, *Railway Age,* Chicago, was advanced from fourth vice-president to third vice-president; and J. L. Varker, supervisor of bridges and buildings, Delaware and Hudson, Carbondale, Pa., was elected fourth vice-president. In addition, Lorene Kindred, Chicago, was elected secretary, and F. E. Weise, chief clerk to the chief engineer, Chicago, Milwaukee, St. Paul & Pacific, Chicago, was re-elected treasurer. Four new directors were also elected, these including L. K. Miner, supervisor of bridges and buildings, New York Central, Albany, New York, for a term of one year, to fill the vacancy created by the advancement of Mr. Varker to fourth vice-president, and F. G. Campbell, assistant chief engineer, Elgin, Joliet & Eastern, Joliet, Ill.; J. S. Hancock, bridge engineer, Detroit, Toledo & Ironton, Detroit, Mich.; and L. C. Winkelhaus, architect engineer, Chicago & North Western, Chicago, each for a term of two years.

The report of the secretary showed 618 members of the association, including 46 new members taken in during the year. Chicago was selected as the meeting city for 1943, and the following eight subjects were selected for study by committees during the year: Salvaging Bridge, Building and Water Service Materials; Men—How to Secure and Hold; Materials—Possibilities of Relief Through Substitution; The Maintenance of Coaling and Sanding Plants to Meet Today's Exacting Requirements; The Cleaning of Pipe Lines in Water Service; Securing Maximum Utilization of Work Equipment; Revising Working Practices to Eliminate Interference with Traffic; and Carrying Over Bridges and Trestles.

Following are abstracts of the comments of those bringing greetings to the meeting from other associations; of the president's address; of the addresses by C. E. Johnston and Ralph Budd; and of two of the committee reports. Separately in this issue is presented the address by David P. Beach, on Critical Materials in Wartime for Bridge, Building and Water Service Work. Other reports and addresses at the meeting will be covered in the issue for next week.

In a message of greetings from the American Railway Engineering Association, H. R. Clarke, president of that association, and chief engineer maintenance of way of the Burlington system, stressed the importance of maintained tracks and structures adequate to the war effort, urged the continued co-operation of maintenance men in the tasks that lie ahead, and expressed confidence in the ability of the railways to continue to carry the war load of the country if they are permitted to secure their minimum essential requirements in materials and are protected in their labor supply to the same extent as other essential war industries. He said, in part:

"Not long ago Joseph Eastman said, 'Maintenance must not be allowed to fall into arrears, and no one has a heavier and graver responsibility than the men who are in charge of this work.' Certainly no one is more fully alive to what will happen if maintenance should fall too far in arrears, than the men on the firing line—those who are carrying the responsibility of which Mr. Eastman spoke. No one knows better than they the difficulties that confront them, and no group of men is more grimly determined that they shall not fail.

"So far the railroads have done such a splendid job that the fear has been expressed by some that we might become self-satisfied and complacent. I have no fear that such an attitude will develop. There is one thing which does give us all deep concern, however. Some in authority know that for the railroads to continue their outstanding record of service, they must have a reasonable amount of vitally needed materials and be protected in their labor supply to the same extent as other essential war industries. Mr. Eastman and some of his staff know this, and in them we have influential friends, but unfortunately, there are others in authority who express confidence that the railroads can continue to meet successfully all demands imposed upon them, no matter what further restrictions are necessary. I hope and believe that the fallacy of this reasoning can and will be presented to these men in such a way by those who do understand the situation correctly, that the tragic phrase, 'Too little, too late' will not apply to the railroads."

Roadmasters Send Greetings

E. L. Banion, roadmaster on the Atchison, Topeka & Santa Fe, and president of the Roadmasters' Association, brought words of greeting from that association and supplemented his remarks in this regard with many helpful suggestions to the end that bridge and building men will be able to meet the war-time problems that confront them. To alleviate the shortage of labor developing in railway ranks, he suggested opening the door to men formerly unsuited to railway work; the more intensive use of machines, and for two or three shifts daily, if necessary; the selection of general-purpose machines to increase their range of operations; and greater co-operation between the several maintenance crafts to avoid the waste of machine time.

Turning to the matter of materials, he cautioned against the hoarding of repair parts, or of emergency or working stocks, and then, in the interest of adding to the car and locomotive supply of the country for war traffic, he urged the prompt unloading of company materials, and, wherever possible, the use of self-propelled cranes, shovels, pile-drivers and similar equipment in company work.

President Dove's Address

In his presidential address, President Dove reviewed the work of the association during the year and the present status of association affairs and then turned to

a discussion of the major problems confronting the railways and of their part in the country's war effort. In this latter regard he said, in part, as follows:

"Our meeting here today can be attributed to the fact that your officers felt that such a meeting would be of help to our national war offensive. Transportation, from the very beginning, has been an essential adjunct to successful warfare—be it offensive or defensive. The railroads are by far the most dependable and satisfactory of all forms of transportation, and it is clear that we must keep them functioning properly to achieve our objective of winning the war.

"Today, our railroads are faced with the task of handling the largest tonnage they have ever carried, and it must be done with less manpower, equipment and materials. The year 1942 will be a peak year in the production of heavy supplies of war, and we have been told that the goal of production in 1943 will be revised upward. On top of all this, our competitors in the transportation field will be handling less. Therefore, it is now up to us to show what we can do.

"A recent public opinion survey made for the Association of American Railroads developed that the public fully expects the railroads to handle the transportation load, even though peak is piled upon peak. It will be a sorry day for us if we do not measure up to this confidence.

"As railway officers, we are entering a period of unusual opportunity to exercise our ingenuity for maintaining our facilities in the face of a limited supply of labor and materials. Also, as railway officers, we have already felt the loss of some of our valuable foremen and workers to the military services and to other more lucrative occupations. We cannot stay the arm of the military when it selects our men, but we can retain for the railways those men with initiative and ability who will be leaving for work elsewhere if not given greater reward and responsibility.

"As employees, we should have faith and confidence in our superior officers and those in other departments. We should believe, for example, that our purchasing and stores officers are doing their best to secure the necessary materials for us, and that they, too, are limited as to what can be done. Also, as employees, we can help in the national scrap campaign. Yet, in our enthusiasm in this regard, we should not cast into the scrap heap those materials that can be rehabilitated. To do so, we might create a situation that calls for new materials."

Johnston on War Problems

Opening the meeting, C. E. Johnston, chairman, Western Association of Railroad Executives, and associate director, Western region, ODT, Chicago, speaking on the Problems That Confront Us, saw as the foremost problem of the nation and the railroads, the problem of winning the war—a goal that, he said, must be achieved in the face of unprecedented traffic demands and shortages in both materials and manpower. The days ahead will put the railroads to the acid test, he said, but he expressed full confidence in railway men to do their part, and in the railways, given their essential minimum requirements, to meet all demands that will be made upon them. He said, in part, as follows:

"To win this war—that is our one great problem. And to the satisfactory solution of that problem we must dedicate our hands, our minds, our hearts and our souls. Until we are able to solve that problem, all others are less disturbing.

"In our great national production line, the railways, as usual, are the main line of transportation—the main line over which must move, in ever-growing volume, the raw materials from mine and forest and field to factory; the main line, too, over which the finished products of tanks and guns and shells must flow unceasingly from our factories to the fighting fronts throughout the world. We are the lines behind the lines—the service of supply of an embattled nation.

"Today, the War department is by far the largest user in the country of railroad transportation service, both freight and passenger. In the nine-month period beginning December 7, 1941, troop movements by rail totaled approximately 6,500,000, as compared with 1,900,000 during the first nine months of the last war. Then, too, these troops are moving with greater speed and comfort than was the case 25 years ago. In 1917, the average speed of special troop trains was less than 25 m. p. h., compared with an average speed today of 30 m. p. h.

"Next to the army, the navy is the largest user of rail facilities in time of war. Thousands of freight cars are moving daily in the direct service of our sea forces. The Naval Bureau of Supplies and Accounts alone routes an average of approximately 50,000 freight cars a month, and this does not include shipments under private bills of lading going to plants engaged in fulfilling navy contracts.

"Not only must our soldiers and sailors be armed and equipped —they must be fed, as well. The American railroads are moving record quantities of food for our army and our navy. It takes about twice as much food to feed a man in uniform as it does a civilian. To feed our army and navy requires about 3,500 carloads of foodstuffs each week. In addition, we are shipping enormous quantities of food to our allies and practically all of this is moved to ports by rail.

"Only by surpassing all previous records of operating efficiency in the use of equipment has it been possible for the railroads to meet the unprecedented demands that have been made upon them. But there is a limit to such accomplishments. The railways must have additional equipment to match, in some degree, the increase in the demand for transportation service. This is another of the problems which now confront us—and a problem that also must be met successfully. And still other major problems confronting us are the problems of shortage—in manpower and materials.

"We are convinced that our task of winning the war will be the greatest and the most difficult we have ever known. It will be even greater and more difficult tomorrow than it is today. Your part in the struggle—the safe and adequate maintenance of the railroad track structure, bridges and other essential facilities, is second to none in importance. You have had a part in making the American railroads the best in the world. I am sure that you will maintain this record."

Ralph Budd Calls for Post-War Planning

Speaking before an audience of nearly 300 at the annual association luncheon on Wednesday, Ralph Budd, president of the Burlington system, urged all-out effort on the part of railway men in the prosecution of the war. At the same time, he cautioned that some consideration should be given now to the post-war place of private enterprise in our society, to avoid chaos and a situation in which it will be necessary for the government to bridge the gap with huge expenditures for federal work. He said, in part, as follows:

"During the present war, the railroads are a favored group. We are favored because we are engaged in a business which is very definitely a part of the war activities, and never should be thought of as apart from them. But, as so often happens, the privilege and favor we enjoy carries with it a very great responsibility, to make sure that everything we do contributes the utmost to the war effort.

"We should keep always before us this motto—'Do today the most that can be done to contribute to the war effort.' And I think that this test is one which should be applied not only to all members of the railroad fraternity, but to all members of the government staffs dealing with the railroad fraternity as well.

"There are two general problems that confront railway officers such as are here today. I am sure that you are considering both of them very earnestly here. One is the greatest care in the use of those materials which have become scarce; the use

of substitute materials where possible; the avoidance of waste and of ordering more material than is absolutely needed. Also, that orders for such materials as are essential are placed in time so that they can be provided in the ordinary way. The greatest attention needs to be given to these matters. The other problem has to do with the personnel of our working forces. Indeed, this latter problem may be the more critical of the two, but certainly both of them are extremely critical.

"We are now getting many new and inexperienced workers. The kind of railroad men these men are going to be will depend to a large extent upon the training they receive from their fellow employees and their foremen.

"Then the question of safety is involved here, so that our new men will use material properly and safely. Present safety figures are not particularly gratifying to us, although the reason, no doubt, is the larger volume of traffic that is being handled, the pressure under which men are working, and the large number of new employees.

"In 1941, there was an increase of 25 per cent in casualties to employees on duty—a large increase. Thus far in 1942, accident reports indicate a further increase. That increase, however, is as compared with years when our safety record was extremely good. Compared with 1927, the accident record of 1940 was very favorable, the decrease being 56.9 per cent; less than half as many injuries in 1940 as there were in 1927. But the accident records of the railroads present a challenge to us, a challenge which is always present and which goes hand in hand with this thought of carefully training and helping new employees.

"A word should be said about the prospects of the railways after the war and what, if anything, can be done at this time about them. Consideration of the post-war status of industry is vital for several reasons, but chiefly because of the dislocations which are now being created by shifting from a peace-time to a war-time basis of production, which, in the shift back, unless something is worked out in advance, might well result in near chaos. The danger of such an eventuality might bring about a situation where, without plans for employment to again take up productive activities, it would be necessary for the government to bridge the gap with a great deal of federal work.

"I am one of those who believes that the expenditure of funds by government can never take the place in a free society of the very much larger expenditures which free enterprise can produce. It is for that reason that I think it is well for those of us who believe that way to see what can be planned in advance.

"There are schools of thought along the two lines—one, that the job will be too great for private enterprise to cope with and, therefore, that the government must take over; and the other, to which I belong, that reliance must be in private enerprise, with a minimum of government. In discussions of these beliefs, I see too little consideration of the contention that as a prerequisite of successful progress after the war, private enterprise, and particularly those that are services, must be subject to regulation. I see, also, too little discussion of the importance of having a well defined policy of government, to the end that the restrictions and inhibitions which we are willingly accepting now in order to win the war, shall be understood as accepted only temporarily, and be removed as promptly as possible after our victory. Assurance in this latter regard, together with a post-war planning which will encourage the entrance of free enterprise again into all of the activities which have produced for us our great industries, will go a long way towards giving the reassurance that we must have.

"The railroads will not lag in the initiative and ingenuity to take care of themselves if they are given the proper atmosphere of regulation. For the time being, we have had to give up a great many technological advances and advantages because certain materials are not obtainable, but immediately when they become available again, we will start where we left off, or perhaps a little further along, and I venture to say that there will be no lack of projects and no lack of employment and productivity if we are given the proper support from those under whom we must work. Our immediate problem is, of course, to get those materials and the manpower which are absolutely necessary. This problem must be recognized by those who are going to have the say as to how available materials and manpower are to be allocated.

"We are fortunate at this juncture in having Joseph B. Eastman as the Director of the Office of Defense Transportation, because he knows very well, probably better than anyone else, about how much the railroads are capable of doing, and when it is absolutely necessary, in the interest of prosecuting the war, to give them more materials. We must have the necessary materials—we must have the necessary men. With them, I have the fullest confidence in those who are represented here to bring about entirely satisfactory results."

Conservation of Materials

Stating that while the conservation of materials is not new to bridge and building men, it has now assumed new importance, since it affects the welfare of the entire nation as well as the railways, a committee, of which F. G. Campbell, assistant chief engineer, Elgin, Joliet & Eastern, was chairman, discussed measures to increase the life of materials in service, greater use of second-hand materials, substitutes for critical materials, and the best methods for the salvage and rehabilitation of used materials, in a comprehensive report on the conservation of bridge, building and water service materials.

The committee recommended that steel structures be cleaned and painted with sufficient frequency to reduce loss from corrosion to the minimum. Also, that welding be resorted to, to restore sections reduced by corrosion and to strengthen structures designed for loadings lighter than they are now required to carry.

According to the report, "the general scrap dock often proves to be a source of usable second-hand materials," while "materials that cannot be used by another department may sometimes be used to advantage by the bridge and building department, this being true especially of materials scrapped by the car department."

On the subject of substitutes for critical materials, the report called attention to possibilities of creosoted timber and concrete as substitutes for steel in many classes of structures.

In the salvage of materials, the report recommended that before a structure is dismantled, a careful inspection be made to determine the best method of removing the material to insure the least possible damage. Also that, in the interest of recovering usable materials, the use of the cutting torch be discontinued for the duration. The report also emphasized the importance of rehabilitating recovered materials as quickly as possible after they have been salvaged, thus making them available for emergency use.

The committee recognized that some of the practices it advocated may not be economical, but the need for materials is so acute, it said, that within reason, economy should not be the ruling factor in recovering usable materials.

Repair of Steel Bridges

The report on this subject, made by a committee of which A. R. Harris, assistant engineer of bridges, Chicago & North Western, was chairman, went into much detail to describe the methods best suited for repairing the various numbers of both truss and girder spans. It emphasized the importance of competent and thorough inspection and the desirability of having inspectors who have a working knowledge of bridge stresses, as well as training and experience. It also stressed the need for carefully prepared field inspection reports, which make it possible for the bridge office to prepare plans for adequate and satisfactory repairs and thus avoid unnecessary and poorly conceived repairs.

The committee recommended that the inspection reports turned in during the year, except those covering emergency requirements, which call for repairs that cannot be delayed, be made the basis for the repair program for the following year.

The report also called attention to the advantages that welding possesses over riveting for repair work since "in many instances material may be added to existing steel work without cutting out rivets, thus reducing temporarily the strength of the structure. It also has the advantage that material may be applied with less interference to traffic than by riveting." It was also recommended that when cover plates of floor beams are corroded, a new cover plate be applied with extra thickness to allow for future corrosion.

The Outlook for Materials for Bridges and Buildings*

War effort requires enforcement of absolute minimums in procurement—Each employee must practice conservation

By D. P. Beach†

Assistant Chief, Maintenance Equipment Section, Transportation Branch, WPB

EVERYONE knows that adequate and efficient transportation is vital to the successful prosecution of the war, but the job right now is to see that the railroads properly function and are maintained with a minimum amount of strategic materials. It is a job that is going to require ingenuity, resourcefulness and vision. The amount of critical materials set aside and available for other than munitions and ordnance has been constantly shrinking with the speeding up of the war program, and now is so small as to become a matter of grave concern. Maintenance requirements must be provided first, with essential expansion or new work getting what is left.

The common problem is to maintain facilities on an absolute minimum basis in order to make available a portion of the critical materials for urgent expansion. Plans for expansion must be designed with only one object in view and that is to meet the emergency with the use of the least amount of critical materials. Ordinarily, the term "absolute minimum basis" does not need any amplification. Usually, this term is associated with cutting operating expenses to the bone as in the depression years of the 1930's. Today the railroads must handle an unprecedented volume of traffic, but the same yardstick must apply with reference to the use of materials nearly all of which are now critical. Lumber requires an emergency rating of AA-2X for reasonable delivery. Bridge, structural and reinforcing steel cannot be procured without a rating comparable to army and navy ratings. Clay products are about the only non-critical materials; and in some sections of the country, it is difficult to get prompt delivery on cement.

War Spirit Not Enough

Of first importance in considering this problem of conserving materials is a full realization of the responsibility of every individual who has anything to do with the ordering or the use of materials. The successful results of the safety movement were accomplished by constant and energetic education in safe practices. The drive to conserve strategic materials for war purposes overshadows any drive in the history of railroading. More vigorous action is required than simply putting out instructions. Everyone has the "must win the war" spirit, but leadership and co-ordinated efforts are essential to success. It is perfectly obvious that this job of saving precious material for guns, ships, tanks and ammunition must be done by the folks at home and not in Washington. The functions of the Transportation Branch of the War Production Board are of a policing nature to see that nothing slips by that isn't vital to war efforts and to assist the railroads in getting what is vital in the war program. The wasteful and unwise use of critical materials should be dealt with as any other infraction of the rules.

To maintain the railroads on an absolute minimum basis under present conditions will require the exercise of good judgment in the use of materials. Every person using or ordering materials from the mechanic to the storekeeper will become material minded in doing his part, if called upon, in the all-out war effort. Facilities which have become obsolete and are more or less worn-out and repair parts which are no longer obtainable may be on programs for renewal. A special examination of such facilities by a qualified inspector may disclose means to keep them safely in service a few years more by patching.

The question to be answered in every such case where renewals seem necessary is, "Can they be made to last a while longer?" Such a procedure may not be the wisest expenditure of money under normal operations, but critical materials are priceless today.

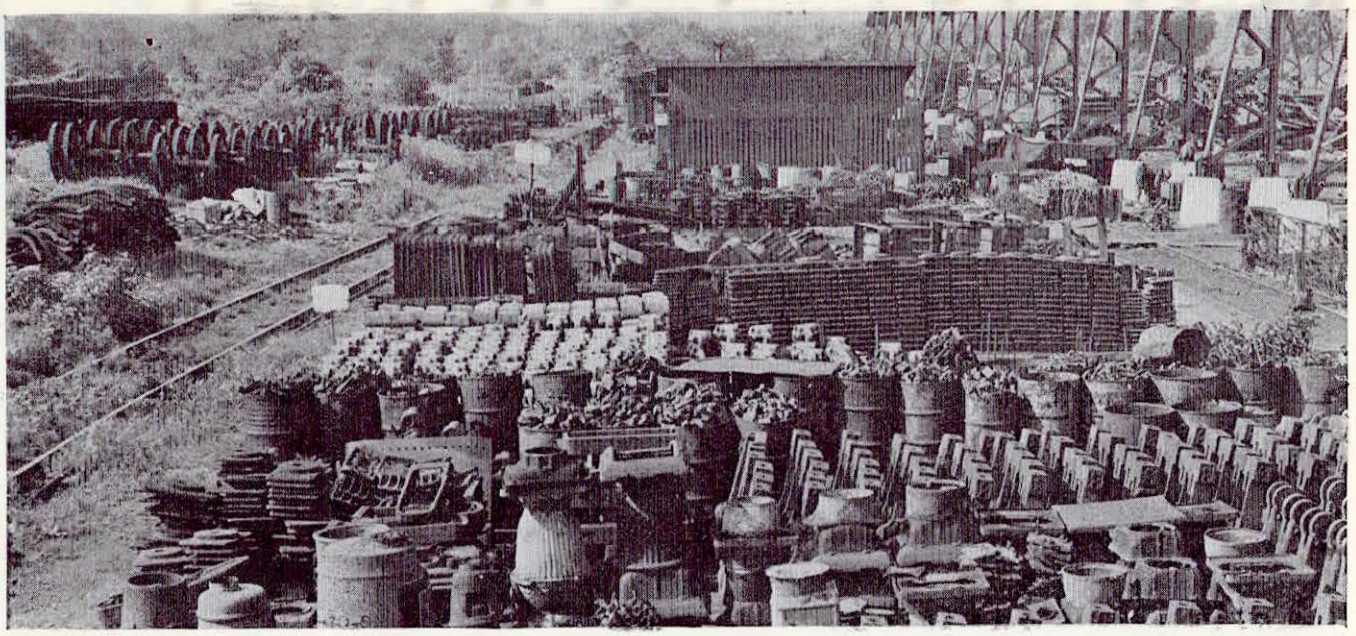
To maintain on an absolute minimum basis requires the use of all salvageable second hand or fit materials. A careful "out of face" inspection should be made of each railroad and branch line and an inventory prepared of facilities that are unused or can be abandoned. The best results from such inspections can best be obtained by well chosen material representatives who know how to search out every cubby hole and corner, not overlooking abandoned water lines or pipes.

To maintain on an absolute minimum basis, bridge programs must be prepared on the basis of repairing and patching necessary to keep them in serviceable condition for the duration. Anything beyond this, such as replacement of spans, should be made only after a rigid

D. P. Beach

* From an address before the American Railway Bridge and Building Association in Chicago, October 21.

† Formerly Pennsylvania Railroad.



Old Materials Gathered at the Erie's Reclamation Plant at Meadville, Pa., for Repair or Disposal as Scrap

inspection and a thorough analysis of traffic conditions. To maintain existing structures under this policy will require closer and more frequent inspections and supervision to see that crucial defects are immediately repaired.

Temporary Expedients Necessary

Many project applications received from various railroads in the country for bridge repairs and renewals were evidently prepared on the "as usual" basis and had to be returned for revision or cancellation or review in person for the purpose of eliminating critical materials. The railroads have responded with a hearty cooperation in meeting this issue. Changes have been made in design to cut down to a minimum the amount of steel to meet traffic requirements for the next few years, saving considerable tonnage of steel. Temporary methods have been employed to continue in service spans which ordinarily would be replaced. Reinforcing steel has been eliminated by redesigning concrete substructures for the use of mass concrete. Where steel must be used, efforts should be exhausted to make use of second hand or scrap materials or a canvass made of supply houses for materials in stock which can be adapted to the purpose. Any bridge design that requires specially rolled plates and shapes requires an emergency rating with an indefinite delivery.

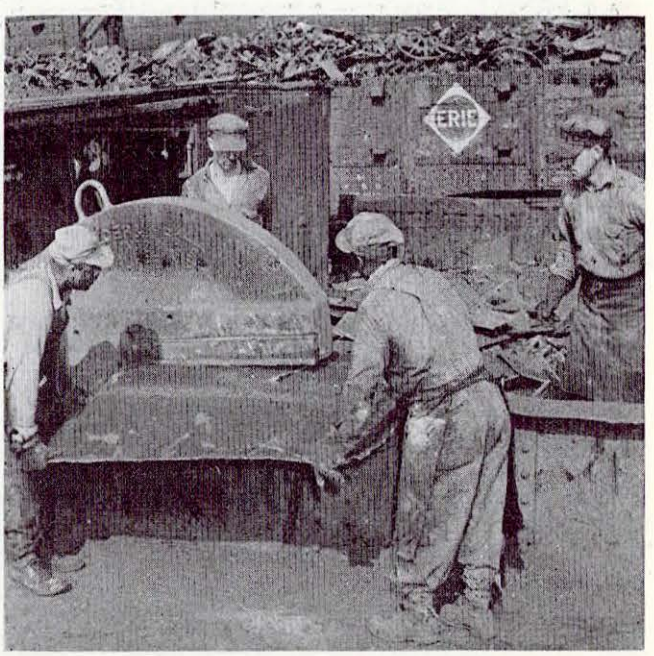
Materials for railroad maintenance are handled under Order P-88 and the provisions in this order are intended to maintain facilities in sound working conditions. Railroad purchasing agents make their request for maintenance materials on Form 351. They must depend, however, upon maintenance forces for correct information of the requirements.

The responsibility, therefore, rests with the maintenance forces to see that these requirements are on an absolute minimum basis; otherwise there will be nothing left for essential new work.

Faulty Applications

Application for priority assistance for construction of new facilities, reconstruction or remodeling of existing facilities is made to the War Production Board on Form PD-200. The application should give a full presentation of the facts with supporting arguments to enable the project to be analyzed with reference to its value in the war effort. Some of the applications which have been received are not complete in this respect and delays have occurred in requesting additional information, plans, etc., and some appeared to be so brief as to indicate that they were made in a perfunctory manner. In these applications, general statements should be supported by specific data to assist the analysts in their examinations. It is needless to mention that applications should be confined to those which are most urgent in relation to transportation and the war effort.

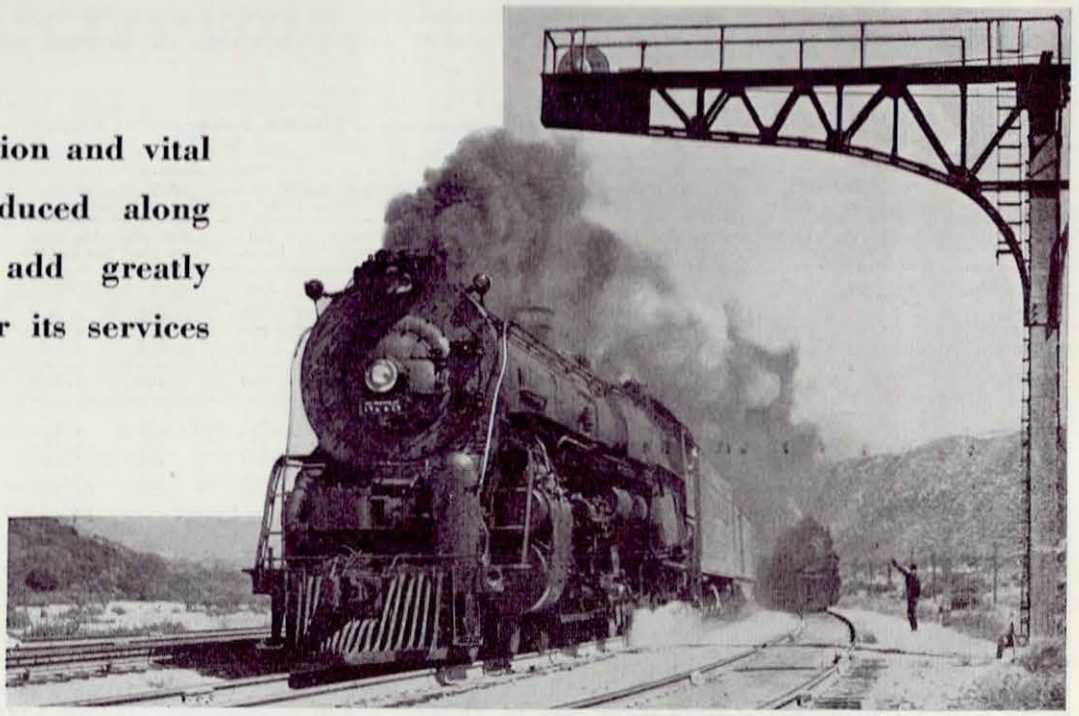
Finally, maintenance on an absolute minimum basis and conservation of critical materials must be rigidly enforced on every railroad in order to meet the present acute shortage.



Shearing Sheet Scrap at Meadville, Pa., Preparatory to its Shipment to Steel Mills

The Santa Fe Aids the War Effort

Strategic location and vital materials produced along this railway add greatly to demand for its services



Long Locomotive Runs with Steam Engines Have Increased the Motive Power Capacity

EVERY department of the Santa Fe has been speeded up to meet the vital transportation responsibility which the war has placed upon this railway. The operating, mechanical, engineering and traffic departments have been in the front line. Before December 7, the Santa Fe was unusually busy in meeting the needs of our National Defense program, but immediately after Pearl Harbor, an unprecedented flood of traffic descended upon the railway, and operations had to be still further accelerated.

The freight traffic now being handled on this railway is the heaviest in history. For the first six months of 1942, the revenue ton miles totaled 12,332,196,000, compared with 7,923,899,000 for the same period in 1941, an increase of 55.6 per cent. In July, 1942, it was called on to move 179,823 carloads of revenue traffic, including 21,091 cars of oil, bringing the total movement of this commodity in the first seven months of 1942 to 137,431 carloads. Passenger traffic has shown an even greater increase. In the first six months of 1942, the number of passengers carried one mile aggregated 1,075,941,672, compared with 571,220,535 in the corresponding period of 1941, an increase of 88.3 per cent.

To handle this traffic, locomotives and cars, track and other equipment, have had to be maintained and improved with the highest efficiency possible; a program was developed for speedier handling, including expedited routing of military supplies; and the officers of the engineering department, in addition to expediting their own work, were called upon by Federal authorities to cooperate in the location and operation of military bases and war production plants, to which undertaking the traffic and industrial staffs of the railway also contributed greatly.

All these results had to be accomplished despite the fact that more than two thousand Santa Fe employees have entered the armed forces, and enlistments since last December have been at the rate of 225 a month. The Santa Fe now has 57,000 employees, an increase of more than 8,700 in the last seven months. These new employees are largely in train and engine service and in the shop, station and track forces.

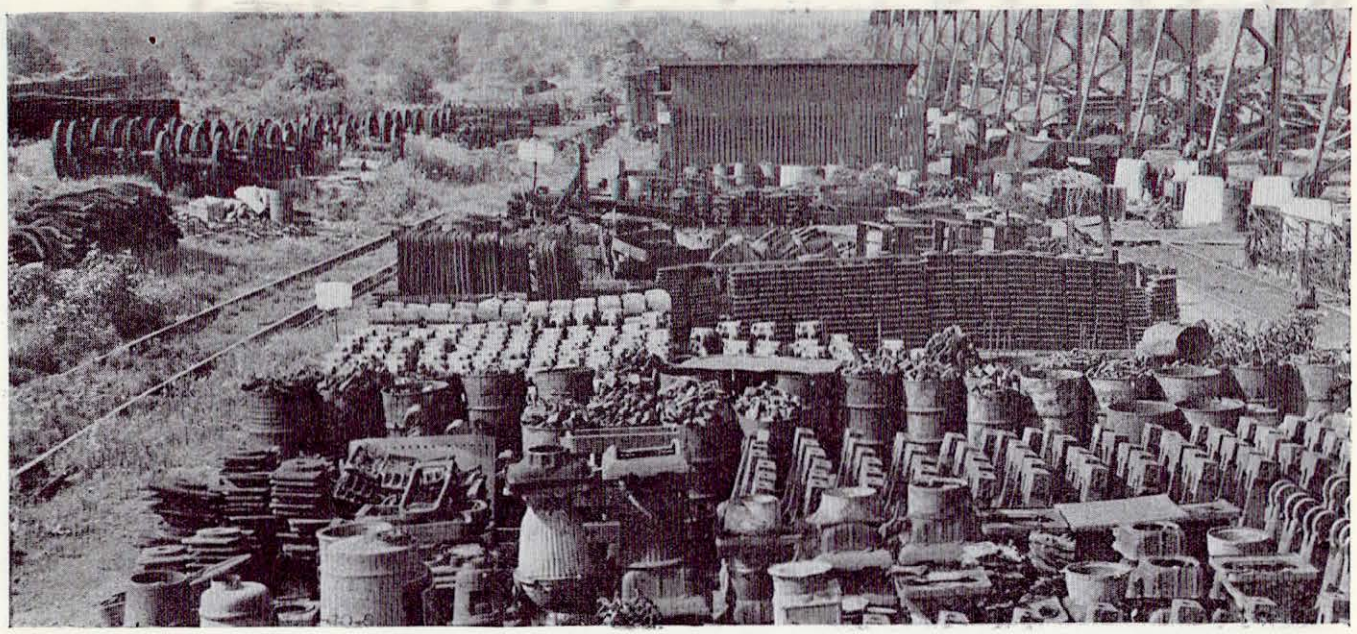
Important Traffic

In the first six months of this year, 599,214,000 barrels of oil, or 88.2 per cent of the country's total production, came from states served by the Santa Fe. Of this, 236,296,000 barrels were produced in Texas alone. Coal is also found in abundant quantities in the Southwest, and steel, iron, lead, copper, zinc, chrome, tungsten, borax and many other essential minerals are moving in increasing large quantities from mines on the Santa Fe to smelters, mills, foundries and manufacturing plants. Large potash mines are located in eastern New Mexico and 90 per cent of the nation's supply of sulphur comes from the Gulf Coast of Texas.

To assist in the procurement of these vital minerals, the Santa Fe has established a mining department to explore the mining possibilities of the territory tributary to its lines, particularly California, Arizona and New Mexico. This department is working closely with federal agencies in the location of minerals required for war production, particularly tin, chrome and tungsten, the imports of which have been seriously restricted or completely discontinued.

Feeding the Nation

Food crops form still another important contribution to the war effort and the Santa Fe serves a vast agricultural empire. The winter wheat crop of the United



Old Materials Gathered at the Erie's Reclamation Plant at Meadville, Pa., for Repair or Disposal as Scrap

inspection and a thorough analysis of traffic conditions. To maintain existing structures under this policy will require closer and more frequent inspections and supervision to see that crucial defects are immediately repaired.

Temporary Expedients Necessary

Many project applications received from various railroads in the country for bridge repairs and renewals were evidently prepared on the "as usual" basis and had to be returned for revision or cancellation or review in person for the purpose of eliminating critical materials. The railroads have responded with a hearty cooperation in meeting this issue. Changes have been made in design to cut down to a minimum the amount of steel to meet traffic requirements for the next few years, saving considerable tonnage of steel. Temporary methods have been employed to continue in service spans which ordinarily would be replaced. Reinforcing steel has been eliminated by redesigning concrete substructures for the use of mass concrete. Where steel must be used, efforts should be exhausted to make use of second hand or scrap materials or a canvass made of supply houses for materials in stock which can be adapted to the purpose. Any bridge design that requires specially rolled plates and shapes requires an emergency rating with an indefinite delivery.

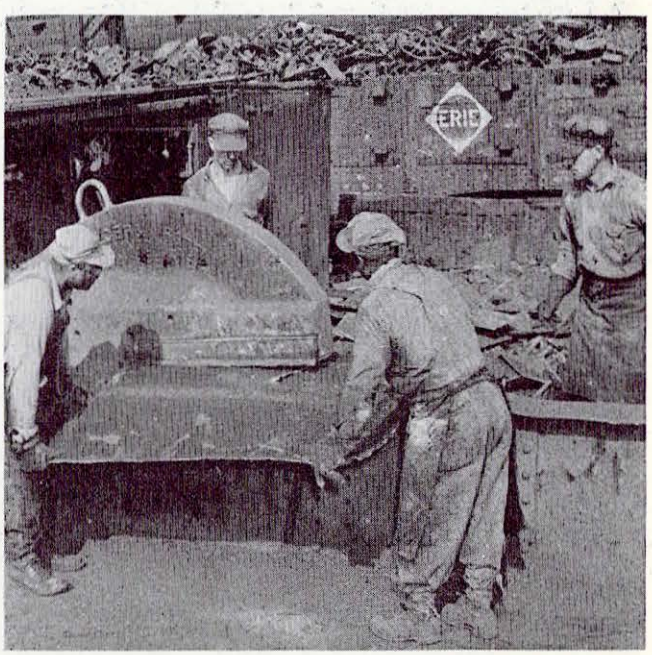
Materials for railroad maintenance are handled under Order P-88 and the provisions in this order are intended to maintain facilities in sound working conditions. Railroad purchasing agents make their request for maintenance materials on Form 351. They must depend, however, upon maintenance forces for correct information of the requirements.

The responsibility, therefore, rests with the maintenance forces to see that these requirements are on an absolute minimum basis; otherwise there will be nothing left for essential new work.

Faulty Applications

Application for priority assistance for construction of new facilities, reconstruction or remodeling of existing facilities is made to the War Production Board on Form PD-200. The application should give a full presentation of the facts with supporting arguments to enable the project to be analyzed with reference to its value in the war effort. Some of the applications which have been received are not complete in this respect and delays have occurred in requesting additional information, plans, etc., and some appeared to be so brief as to indicate that they were made in a perfunctory manner. In these applications, general statements should be supported by specific data to assist the analysts in their examinations. It is needless to mention that applications should be confined to those which are most urgent in relation to transportation and the war effort.

Finally, maintenance on an absolute minimum basis and conservation of critical materials must be rigidly enforced on every railroad in order to meet the present acute shortage.



Shearing Sheet Scrap at Meadville, Pa., Preparatory to its Shipment to Steel Mills

What Coal Equivalents Do to Fuel Performance Records

Fuel and Traveling Engineers' Committee points out distorting effect on roads where high percentages of service are performed with oil or electric power

THE discussion of previous reports of this committee* dealing with coal equivalents at present used for equating the various kinds of fuel and power have centered particularly around the question of the coal equivalent used by different roads for equating the fuel oil used in oil burning steam locomotives. This preponderance of interest has probably been based upon the fact that on eighteen roads in the Western District during 1941 the fuel oil used in oil-burning steam locomotives ranged in amount from 2.3 per cent to 100 per cent, with an average of 43.7 per cent of the total fuel reported in freight service on those roads, and the correspondingly important effect upon the unit fuel performance reported by these roads that is exercised by the equivalent values used in equating the oil to coal.

Coal Equivalents of Fuel Oil

For this reason the committee has prepared Table I to set forth some of the significant aspects of this situation as reported by these roads for the year 1941. The comparisons here shown may prove of great interest to our members and we hope that they may interest the accounting officers of the railroads.

The eighteen roads have been listed in two groups. For the eight roads included in Group I the equivalent values which are used in equating fuel oil to coal, gallons per ton, vary from 126 to 162 and average 140. The ten roads in Group II all use an equivalent value, in equating fuel oil to coal, of 168 gals. per ton. The percentage of the gross ton-mileage of each road that is made with oil-burning locomotives (Col. 1) is shown to vary from 2.7 to 75.3 with an average of 27.8 per cent for the Group I roads, while this item varies from 40.8 to 100.0 with an average of 81.4 per cent for the Group II roads.

Section 1 of the table shows for each road, and for the averages of the groups, how the equivalent coal consumption in pounds per 1,000 gross ton-miles works out for the oil-burning locomotives (Col. 5), the coal-burning locomotives (Col. 6) and all the locomotives (Col. 7), based on the equivalent values actually used by each road (Col. 3). The average oil consumption of the Group I roads in gallons per 1,000 gross ton-miles (Col. 2) is only 3.5 per cent greater than that of the Group II roads, but the averages of the equating values used makes the pounds of coal per gallon of oil (Col. 4) 20.2 per cent higher for the Group I roads with the result that the average pounds of equivalent coal per 1,000 gross ton-miles for oil-burning locomotives (Col. 5) on the Group I roads is 24.2 per cent higher than on the Group II roads.

Section 2, of Table I shows how these items would work out for each of the eighteen roads listed if each road should use the equivalent value for equating fuel oil to coal, 140 gals. per ton, that is shown to be the arith-

Table I—A Study of the Influence of Equating Values, Fuel Oil to Coal, on Unit Fuel Consumption Reports in 1941

			SECTION 1					SECTION 2				
			Equating value used, oil to coal		Equivalent coal, lb. per 1000 g. t. m.			Avg. equating value		Equivalent lb. coal per 1000 g. t. m.		
Road	Per cent of g. t. m. with oil-burning locos.	Oil consumption gals. per 1000 g. t. m.	Gals. per ton	Lb. coal per gal.	Oil-burning locos.	Coal-burning locos.	All locos.	Gals. per ton	Lb. per gal.	Oil-burning locos.	Coal-burning locos.	All locos.
Group I:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Nor. Pac.	2.7	6.65	126	15.9	106	125	124	140	14.3	95	125	124
Gt. Nor.	47.5	6.47	127	15.7	102	91	96	140	14.3	92	91	92
C. M. St. P. & P.	4.6	9.03	128	15.6	141	109	115	140	14.3	129	109	114
C. B. & Q.	5.3	8.09	130	15.4	124	106	108	140	14.3	115	106	107
A. T. & S. F.	75.3	8.21	138	14.5	119	108	116	140	14.3	117	108	115
Un. Pac.	19.7	10.85	147	13.6	147	118	124	140	14.3	155	118	125
C. & N. W.	7.0	9.67	157	12.7	123	117	118	140	14.3	138	117	119
Mo. Pac.	13.7	7.54	162	12.3	93	117	113	140	14.3	108	117	115
Averages	27.8	8.28	140	14.3	118	113	115	140	14.3	118	113	115
Group II:												
Westn. Pac.	73.5	7.71	168	11.9	92	109	96	140	14.3	110	109	110
K. C. Sou.	69.0	8.68	168	11.9	103	135	113	140	14.3	124	135	127
M. K. & T.	99.8	7.09	168	11.9	84	274	85	140	14.3	101	274	102
Frisco	40.8	9.06	168	11.9	108	129	121	140	14.3	130	129	130
St. L.-S. W.	97.9	6.76	168	11.9	81	195	83	140	14.3	97	195	98
I. G. N.	100.0	9.08	168	11.9	108	—	108	140	14.3	130	—	130
T. & N. O.	100.0	7.15	168	11.9	85	—	85	140	14.3	102	—	102
T. & P.	100.0	7.10	168	11.9	85	—	85	140	14.3	102	—	102
C. R. I. & P.	54.3	8.11	168	11.9	97	124	110	140	14.3	116	124	120
Sou. Pac.	93.3	8.39	168	11.9	100	107	100	140	14.3	120	107	119
Averages	81.4	8.00	168	11.9	95	122	100	140	14.3	115	122	116
Averages of Groups I and II	45.9	8.12	155	12.9	105	115	110	140	14.3	116	115	115

Note: Gross ton-miles include the locomotive and tender.

* This article is taken from the report of the Committee on Fuel Records and Statistics of the Railway Fuel and Traveling Engineers' Association. No meeting of the Association will be held this year, but this and other committee reports will be published by the Association in a year book for distribution to its members.

metical average of the values actually used by the Group I roads for this item (Cols. 3-4-8-9). It will be noted that under this assumption the values for pounds of equivalent coal per 1,000 gross ton-miles with oil-burning locomotives (Col. 11) for each of the eighteen roads is different from that shown in Col. 5. The unit coal consumption of the coal-burning locomotives is of course per cent greater on the Group 1 roads where the electrified lines are principally on heavy mountain grades.

The equivalent value used for equating electric power to coal, stated as pounds of coal per kw. hrs. (Col. 4) by the Group I roads averages 4.25, which is 169 per cent greater than the average value of 1.58 used by the

Table II—A Comparison of Coal Equivalents of Electric Power on Six Railways, 1941

Road	Per cent g. t. m. with electric locos.	Electric power consumed—kw. hrs. per 1000 g. t. m.	SECTION 1: Equiv. val. used electric to coal: Kw. hrs. per ton	SECTION 1: Equiv. val. used electric to coal: Lb. coal per kw. hr.	SECTION 1: Equivalent coal in lb. per 1000 g. t. m.: Elec. locos.	SECTION 1: Equivalent coal in lb. per 1000 g. t. m.: Steam locos.	SECTION 1: Equivalent coal in lb. per 1000 g. t. m.: All locos.	SECTION 2: Avg. equivalent value: Kw. hrs. per ton	SECTION 2: Avg. equivalent value: Lb. coal per kw. hr.	SECTION 2: Equivalent lb. coal per 1000 g. t. m.: Elec. locos.	SECTION 2: Equivalent lb. coal per 1000 g. t. m.: Steam locos.	SECTION 2: Equivalent lb. coal per 1000 g. t. m.: All locos.
			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Group I:												
Gt. Nor.	1.4	32.22	350	5.72	184	91	96	470	4.25	137	91	96
C. M. St. P. & P.	8.7	30.19	380	5.26	159	109	115	470	4.25	128	109	112
N. & W.	2.5	84.46	684	2.92	246	83	87	470	4.25	338	83	91
Averages	4.3	41.00	470	4.25	174	96	100	470	4.25	174	96	100
Group II:												
Virginian	33.4	37.96	1,094	1.83	69	106	94	470	4.25	162	106	125
Penna.	14.1	21.49	1,333	1.50	32	124	112	470	4.25	91	124	120
N. Y. N. H. & H.	19.2	25.31	1,363	1.47	37	118	103	470	4.25	108	118	116
Averages	15.5	23.80	1,265	1.58	37	123	110	470	4.25	101	123	120
Averages of total Groups I and II	10.8	26.62	870	2.30	60	111	106	470	4.25	113	111	111

Note: Gross ton-miles include the locomotive and tender.

unchanged (Cols. 6 and 11); the values for pounds of equivalent coal per 1,000 gross ton-miles for all locomotives (Col. 12) is slightly different for all except one of the Group I roads and is from 9 per cent to 20 per cent higher for each of the roads in Group II. While the averages for the Group I roads remain unchanged, since this is the base for the recalculation, the averages for the Group II roads, except for Cols. 6 and 11, are from 16 to 20 per cent higher in Section 2 than in Section 1 of the table, due to the effect of the difference in the equivalent value used for equating oil to coal which results in an average difference of 20 per cent in the weight of coal recorded per gallon of oil consumed.

The Coal Equivalent of Electric Power

Because of the fact that there is such wide variation in the equivalent values for equating electric power to coal used by the six railroads on which electrical operation is sufficiently important to exert an appreciable effect upon the performance records in road freight service, we have prepared Table II to set forth some interesting comparisons.

The six roads have been listed in two groups. The three roads included in Group I use equivalent values in equating electric power to coal which vary from 350 to 684 kw. hrs. per ton of coal and average 470. The three roads listed in Group II use equating values which vary from 1,094 to 1,363 and average 1,265 kw. hrs. per ton of coal.

The percentage of the gross ton-mileage of each road that is made with electric locomotives (Col. 1) is shown to vary from 1.4 to 8.7, with an average of 4.3 per cent for the Group I roads, while this item varies from 14.1 to 33.4, with an average of 15.5 per cent, for the Group II roads. From this it follows that the choice of equivalent values for equating electric power to coal exercises a much more important influence on the final values of the fuel units reported for the Group II roads than for the Group I roads, which is clearly shown by the comparison of Cols. 7 and 12.

The electric power consumed in kw. hrs. per 1,000 gross ton-miles (Col. 2) by the Group I roads averages 41.00 and by the Group II roads averages 23.80—72.3 Group II roads. It is obvious that this very great difference in the equating values used is principally responsible for the fact that the Group I roads report an average of 174 lb. of equivalent coal per 1,000 gross ton-miles, made with electric locomotive (Col. 5) which is 370 per cent higher than the average of only 37 lb. reported by the Group II roads.

Section 2 of Table II has been compiled in the same manner as was Section 2 of Table I, based upon applying to the calculation for each road the arithmetical average of the equivalent values used by the Group I roads, i.e., 470 kw. hrs. per ton of coal or 4.25 lb. of coal per kw. hr. When calculated in this manner the effects of differences in the equivalent values used for equating electric power to coal on the different roads are eliminated from the computation and the effects of the differences in the actual unit consumption of electric power, in kw. hrs. per 1,000 gross ton-miles, alone appears. This produces an average for the Group II roads of 101 lb. of equivalent coal per 1,000 gross ton-miles made with electric locomotives (Col. 10) instead of the average of 37 lb. which was actually reported (Col. 5).

Followed through to the final unit, equivalent pounds of coal per 1,000 gross ton-miles made by all locomotives (Col. 12) the average for the Group II roads becomes 120 instead of the 110 (Col. 7) which was actually reported and the unit for each individual road in the group is correspondingly raised as shown by the comparison of Cols. 7 and 12.

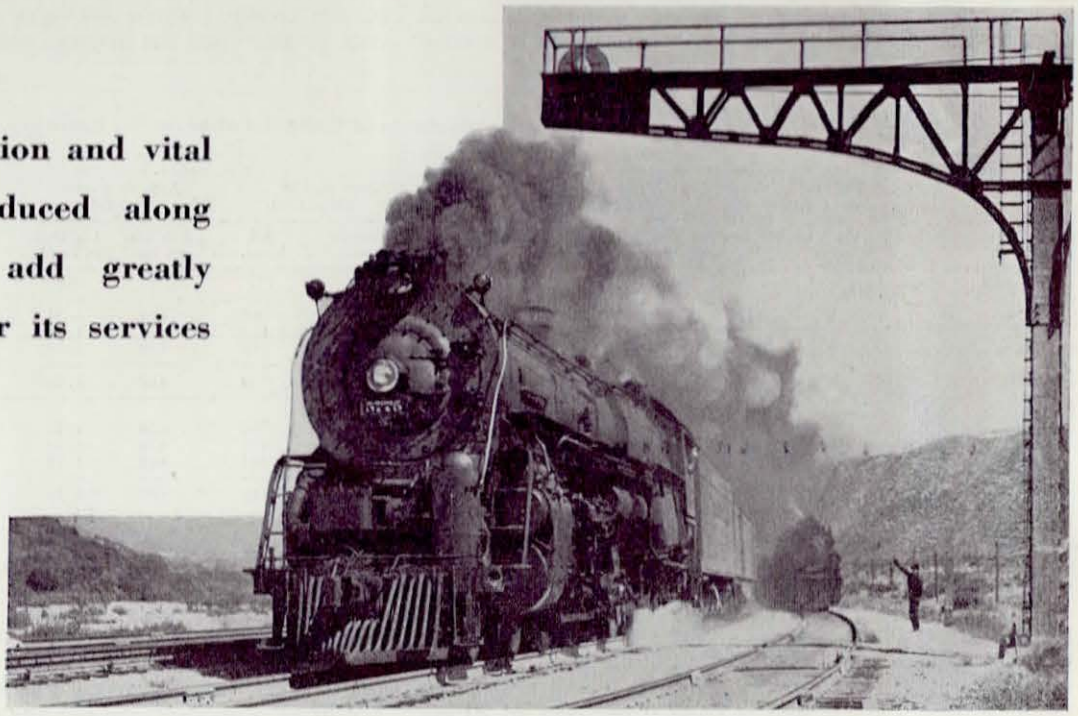
The demonstration afforded by these exhibits offers ample evidence of the important effect upon the fuel performance finally reported that is exercised by the mere choice of the equivalent values to be used in equating the several forms of fuel and power to coal.

The standard or basis of equivalence with which the committee has found no disagreement in principle is: "A consistent equating value for any form of fuel or power is one that will produce a fuel unit, in pounds of equivalent coal per service unit, of the same order of value as that produced on the same territory by coal-burning locomotives in the same kind of service, and therefore the conversion factor or equating value used should be such that a road using electricity, fuel oil,

(*Continued on page 703*)

The Santa Fe Aids the War Effort

Strategic location and vital materials produced along this railway add greatly to demand for its services



Long Locomotive Runs with Steam Engines Have Increased the Motive Power Capacity

EVERY department of the Santa Fe has been speeded up to meet the vital transportation responsibility which the war has placed upon this railway. The operating, mechanical, engineering and traffic departments have been in the front line. Before December 7, the Santa Fe was unusually busy in meeting the needs of our National Defense program, but immediately after Pearl Harbor, an unprecedented flood of traffic descended upon the railway, and operations had to be still further accelerated.

The freight traffic now being handled on this railway is the heaviest in history. For the first six months of 1942, the revenue ton miles totaled 12,332,196,000, compared with 7,923,899,000 for the same period in 1941, an increase of 55.6 per cent. In July, 1942, it was called on to move 179,823 carloads of revenue traffic, including 21,091 cars of oil, bringing the total movement of this commodity in the first seven months of 1942 to 137,431 carloads. Passenger traffic has shown an even greater increase. In the first six months of 1942, the number of passengers carried one mile aggregated 1,075,941,672, compared with 571,220,535 in the corresponding period of 1941, an increase of 88.3 per cent.

To handle this traffic, locomotives and cars, track and other equipment, have had to be maintained and improved with the highest efficiency possible; a program was developed for speedier handling, including expedited routing of military supplies; and the officers of the engineering department, in addition to expediting their own work, were called upon by Federal authorities to cooperate in the location and operation of military bases and war production plants, to which undertaking the traffic and industrial staffs of the railway also contributed greatly.

All these results had to be accomplished despite the fact that more than two thousand Santa Fe employees have entered the armed forces, and enlistments since last December have been at the rate of 225 a month. The Santa Fe now has 57,000 employees, an increase of more than 8,700 in the last seven months. These new employees are largely in train and engine service and in the shop, station and track forces.

Important Traffic

In the first six months of this year, 599,214,000 barrels of oil, or 88.2 per cent of the country's total production, came from states served by the Santa Fe. Of this, 236,296,000 barrels were produced in Texas alone. Coal is also found in abundant quantities in the Southwest, and steel, iron, lead, copper, zinc, chrome, tungsten, borax and many other essential minerals are moving in increasing large quantities from mines on the Santa Fe to smelters, mills, foundries and manufacturing plants. Large potash mines are located in eastern New Mexico and 90 per cent of the nation's supply of sulphur comes from the Gulf Coast of Texas.

To assist in the procurement of these vital minerals, the Santa Fe has established a mining department to explore the mining possibilities of the territory tributary to its lines, particularly California, Arizona and New Mexico. This department is working closely with federal agencies in the location of minerals required for war production, particularly tin, chrome and tungsten, the imports of which have been seriously restricted or completely discontinued.

Feeding the Nation

Food crops form still another important contribution to the war effort and the Santa Fe serves a vast agricultural empire. The winter wheat crop of the United

States this year was the second largest in history, and approximately 60 per cent of the total crop was grown and harvested in states served by the Santa Fe, with some 33 per cent produced in Kansas alone. This territory also produces about 50 per cent of the nation's corn, 38 per cent of the oats, 42 per cent of the barley, 96 per cent of the grain sorghums, 100 per cent of the broom corn and 78 per cent of the rice.

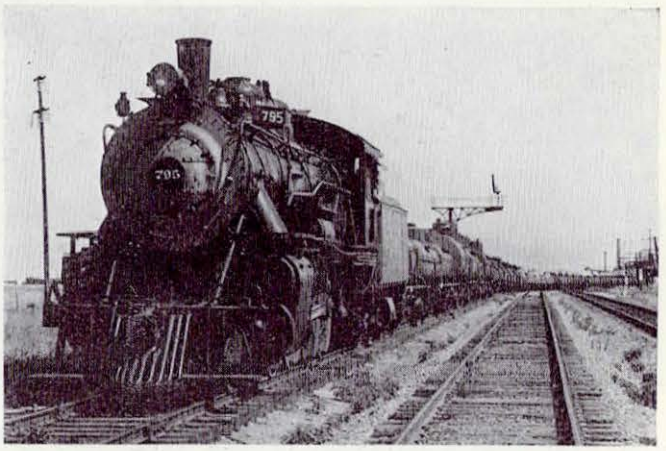
About 48 per cent of the nation's cattle are raised in these states; 50 per cent of the hogs and nearly 50 per cent of the sheep and lambs. Livestock shipments average 80,000 carloads annually on the Santa Fe, a figure which will probably be exceeded this year. The ranches and farms in the Santa Fe territory produce 40 per cent of the nation's poultry, including 51 per cent of the turkeys. The huge production of fruits and vegetables in California, Arizona and Texas alone contributes a sizable proportion of the total production of the country.

The Motive Power Situation

To handle this vast and important traffic, which has been increasing rapidly, the cars and locomotives have had to be put in condition for maximum utilization. To aid in accomplishing this, the Santa Fe has placed its four major shops—at Topeka, Kan., Cleburne, Texas, Albuquerque, N. M., and San Bernardino, Calif.,—on a 16-hr. per day basis.

The Santa Fe Is One of the Country's Outstanding Troop Carriers

The power situation on the Santa Fe has been helped by the fact that is owns the largest fleet of Diesel-electric locomotives in operation on any railway. Since 1936, the Santa Fe has purchased 28 Diesel-electric road locomotives, with a total of 115,600 h. p., and 48 Diesel-electric switchers. Five of the latter were received and placed in service during August and September. This increase of 159,220 h. p. is the approximate increase in horsepower for all locomotives on the railway since 1936, since the increase in steam power has been virtually offset by retirements.



Tremendous Quantities of Oil Are Moving All-Rail From the Santa Fe Territory to the Eastern Seaboard

Beginning early in 1941, the first Diesel-electric road freight engine was placed in service. The Santa Fe now operates 12 such locomotives, 8 of which were installed this year. These locomotives operate between Argentine, Kan., and Belen, N. M., 877 miles, and between Winslow, Ariz., and San Bernardino, Calif., 540 miles or between Winslow and Bakersfield, Calif., 600 miles. The Diesel-electric passenger engines are operated between Chicago and Los Angeles, 2,227 miles, on the Super Chief and El Capitan, and between runs, are used for round trips from Chicago to Kansas City, or from Los Angeles to San Diego. Such locomotives are also operated between Chicago and Tulsa and Oklahoma City and between Oakland, Calif., and Bakersfield.

The runs of steam locomotives have also been extended materially. The Santa Fe has one through passenger locomotive run of 1,788 miles, between Argentine, Kan., and Los Angeles via Amarillo, Texas. Other long passenger runs with steam locomotives are from Los Angeles to Newton, Kan., 1,590 miles, and from Argentine, Kan., to Galveston, Texas, 923 miles. Steam freight locomotives also make materially longer runs to conserve power, the longest being from Argentine, Kan., to Cleburne, Texas.

As of December 31, 1941, the Santa Fe owned 79,929 freight cars of all types. Since then there have been added 75 covered hoppers, 70-tons capacity; 76 tank cars, 16,000-gal. capacity; and 1,182 regular box cars and 263 auto-box cars of 50-tons capacity, making the total present supply 81,525 cars. The large tank cars have been particularly useful in taking care of the increasing all-rail oil movement. The covered hopper cars carry an average load of 150,000 lb. of bulk cement, or about three times the tonnage that can be handled in sacks in a box car.

The Santa Fe now has 100 specially designed cars for handling airplanes and airplane parts to serve the many

service between stations on this line. Five passenger trains are operated in each direction daily. Several months ago, four more passenger trains were removed from the schedule to release equipment and locomotives for other service. From one to as many as four extra sections of certain overnight trains are operated on some nights, the peak being on week-end nights. Other movements require as many as ten or more additional extra passenger trains in a 24-hour period. One merchandise freight train is operated in each direction on passenger train schedule while three other freight trains are scheduled westbound and two eastbound. On heavy traffic days, from three to four extra sections of each scheduled freight train are required.

Thus the total number of train movements over this territory averages from 33 to 36 daily. As a general rule, the helper locomotives operate through from East to West or vice versa. As long as the number of trains in each direction are about equal and properly distributed, no light movements of helpers are required. For example, on a typical day there were only five occasions in which a helper was run light between the two ends of the territory.

For many years this 17-mile section of mountain grade has been the bottleneck which limited the capacity of the entire division. Trains of the same name are scheduled to leave each of two terminals at the same time. On the basis of train time, the territory between East and West is midway between these terminals so that paired trains of opposing directions meet in this section. On account of the heavy curvature and grades, the speeds are limited to the extent that the best possible running time eastbound between West and East is 34 minutes, and westbound 37 minutes. These periods are so long that train schedules cannot be set back or advanced to allow the meets to be made off of this territory. As a result, in this 17-mile section, six of the passenger trains have one scheduled meet, two have two meets and two have three meets. Each of the two overnight merchandise freight trains has three meets.

The three-hour peak is between 12:35 a. m. and 3:13 a. m., during which time four scheduled passenger trains and the two merchandise trains are handled. On some nights, the freight trains require one extra section, and one of the passenger trains may run in as many as four sections in each direction, thus increasing the number of meets and the congestion of trains.

Solution of the Problem

For many years this section of line has been protected by automatic block signaling, the passing track switches being operated by hand-throw stands, and train movements were authorized by time-table and train orders. On account of the mountainous character of the terrain and the tunnels, the addition of a second main track, as a means for increasing track capacity, or the reconstruction of the single-track line to reduce the curvature and grade as a means for increasing the speed of trains when in motion, would be so expensive as to be beyond reason. The only logical solution, therefore, was to install centralized traffic control by means of which a considerable proportion of the train time previously lost in delays could be saved, thus not only reducing the total time for each train, but also getting each train off the territory more quickly, thereby permitting other trains to enter. Thus the capacity of the existing line could be increased.

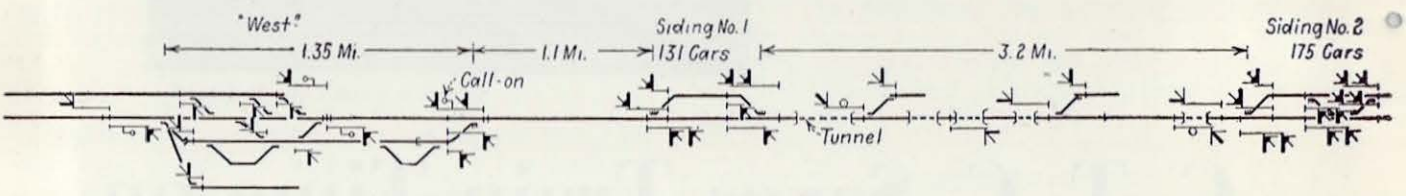
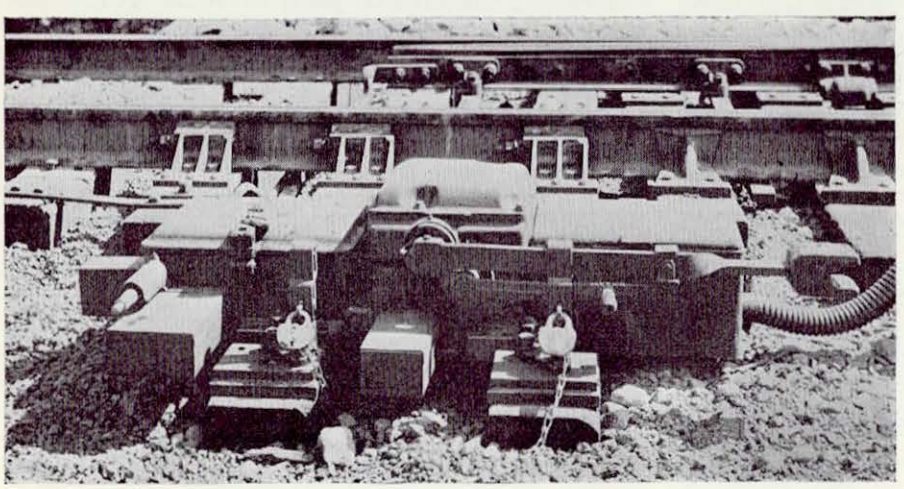


Fig. 1—Plan Showing the Locations of the Tracks, Switches and Signals

Because of the numerous meets between trains, the power switches included in the new centralized traffic control system accomplish a considerable proportion of the total saving in train time. The turnouts are No. 14 so that trains can make diverging moves to or from the main track at speeds up to 25 m. p. h.; therefore, the trains can now enter or depart from passing tracks at normal speed and without stopping to permit the operation of hand-throw stands. Circumstances vary, depending on the grades, the curvature and the length, as well as the direction of trains, but, on the average, the power switch machines save about 4 to 6 minutes when a train is entering a passing track and about 6 to 10 minutes when departing. The signaling is so arranged



Each Power Switch is Operated by a Dual-Control, Low-Voltage D-C. Switch Machine

States this year was the second largest in history, and approximately 60 per cent of the total crop was grown and harvested in states served by the Santa Fe, with some 33 per cent produced in Kansas alone. This territory also produces about 50 per cent of the nation's corn, 38 per cent of the oats, 42 per cent of the barley, 96 per cent of the grain sorghums, 100 per cent of the broom corn and 78 per cent of the rice.

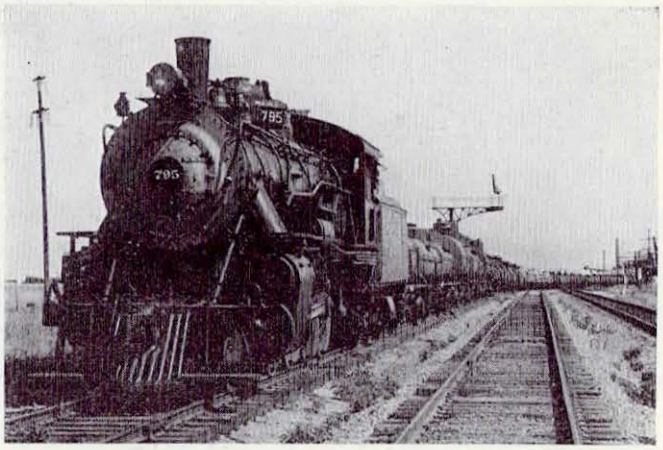
About 48 per cent of the nation's cattle are raised in these states; 50 per cent of the hogs and nearly 50 per cent of the sheep and lambs. Livestock shipments average 80,000 carloads annually on the Santa Fe, a figure which will probably be exceeded this year. The ranches and farms in the Santa Fe territory produce 40 per cent of the nation's poultry, including 51 per cent of the turkeys. The huge production of fruits and vegetables in California, Arizona and Texas alone contributes a sizable proportion of the total production of the country.

The Motive Power Situation

To handle this vast and important traffic, which has been increasing rapidly, the cars and locomotives have had to be put in condition for maximum utilization. To aid in accomplishing this, the Santa Fe has placed its four major shops—at Topeka, Kan., Cleburne, Texas, Albuquerque, N. M., and San Bernardino, Calif.,—on a 16-hr. per day basis.

The Santa Fe Is One of the Country's Outstanding Troop Carriers

The power situation on the Santa Fe has been helped by the fact that is owns the largest fleet of Diesel-electric locomotives in operation on any railway. Since 1936, the Santa Fe has purchased 28 Diesel-electric road locomotives, with a total of 115,600 h. p., and 48 Diesel-electric switchers. Five of the latter were received and placed in service during August and September. This increase of 159,220 h. p. is the approximate increase in horsepower for all locomotives on the railway since 1936, since the increase in steam power has been virtually offset by retirements.



Tremendous Quantities of Oil Are Moving All-Rail From the Santa Fe Territory to the Eastern Seaboard

Beginning early in 1941, the first Diesel-electric road freight engine was placed in service. The Santa Fe now operates 12 such locomotives, 8 of which were installed this year. These locomotives operate between Argentine, Kan., and Belen, N. M., 877 miles, and between Winslow, Ariz., and San Bernardino, Calif., 540 miles or between Winslow and Bakersfield, Calif., 600 miles. The Diesel-electric passenger engines are operated between Chicago and Los Angeles, 2,227 miles, on the Super Chief and El Capitan, and between runs, are used for round trips from Chicago to Kansas City, or from Los Angeles to San Diego. Such locomotives are also operated between Chicago and Tulsa and Oklahoma City and between Oakland, Calif., and Bakersfield.

The runs of steam locomotives have also been extended materially. The Santa Fe has one through passenger locomotive run of 1,788 miles, between Argentine, Kan., and Los Angeles via Amarillo, Texas. Other long passenger runs with steam locomotives are from Los Angeles to Newton, Kan., 1,590 miles, and from Argentine, Kan., to Galveston, Texas, 923 miles. Steam freight locomotives also make materially longer runs to conserve power, the longest being from Argentine, Kan., to Cleburne, Texas.

As of December 31, 1941, the Santa Fe owned 79,929 freight cars of all types. Since then there have been added 75 covered hoppers, 70-tons capacity; 76 tank cars, 16,000-gal. capacity; and 1,182 regular box cars and 263 auto-box cars of 50-tons capacity, making the total present supply 81,525 cars. The large tank cars have been particularly useful in taking care of the increasing all-rail oil movement. The covered hopper cars carry an average load of 150,000 lb. of bulk cement, or about three times the tonnage that can be handled in sacks in a box car.

The Santa Fe now has 100 specially designed cars for handling airplanes and airplane parts to serve the many

A Large Fleet of Diesel-Electric Road and Switching Locomotives Has Aided In Meeting the War-Time Test

plants located on its line. Rush movements to these and other war production plants are handled in part by 200 dual service cars. These cars are fitted with high-speed trucks and steam and signal lines so they can be handled in either passenger or freight trains, being included in regular passenger trains, or operated in blocks of 20 or 30 as high-speed freight trains when the necessity arises.

Much New Construction

In addition to materially increased regular work, the engineering department of the Santa Fe has mobilized to assist in the emergency. After assisting in locating favorable sites for the establishment of military bases, ordnance plants, flying fields, training schools and war industry plants, the engineers mapped out the tracks and other facilities. In all, this rush expansion program called for 293 miles of new tracks. Some of this, beyond the right-of-way, was constructed by contractors; other sections were built by Santa Fe track forces. Connecting spur leads and sidetracks on railway property amount to 27.6 miles.

Because of priorities, the regular betterment program of the railway has been curtailed somewhat. However, 169.5 miles of new 112 and 131-lb. rail have been laid in 1942 and 357 miles have been re-surfaced, including tie and ballast renewals. Under the W. P. A. order of April 22, the railways are required to place relay rail at the disposal of the government to an amount equal to 90 per cent of the new rail received. As of October 1, the Santa Fe had met and far exceeded this requirement by turning over 213 per cent of relay rail.

Improved Communications

An improvement and expansion program of the communication system, on which work was begun in 1940, has enabled the telegraph department to handle the vastly increased work. This program has increased the capacity of the communication system about 150 per cent, through the adoption of multi-channel carrier telegraph and telephone equipment, connecting all important offices and intermediate points on the system. In addition, a comprehensive network of circuits has been installed for teletype handling of wheel reports. In all, 1,524 miles of carrier channels have been installed.

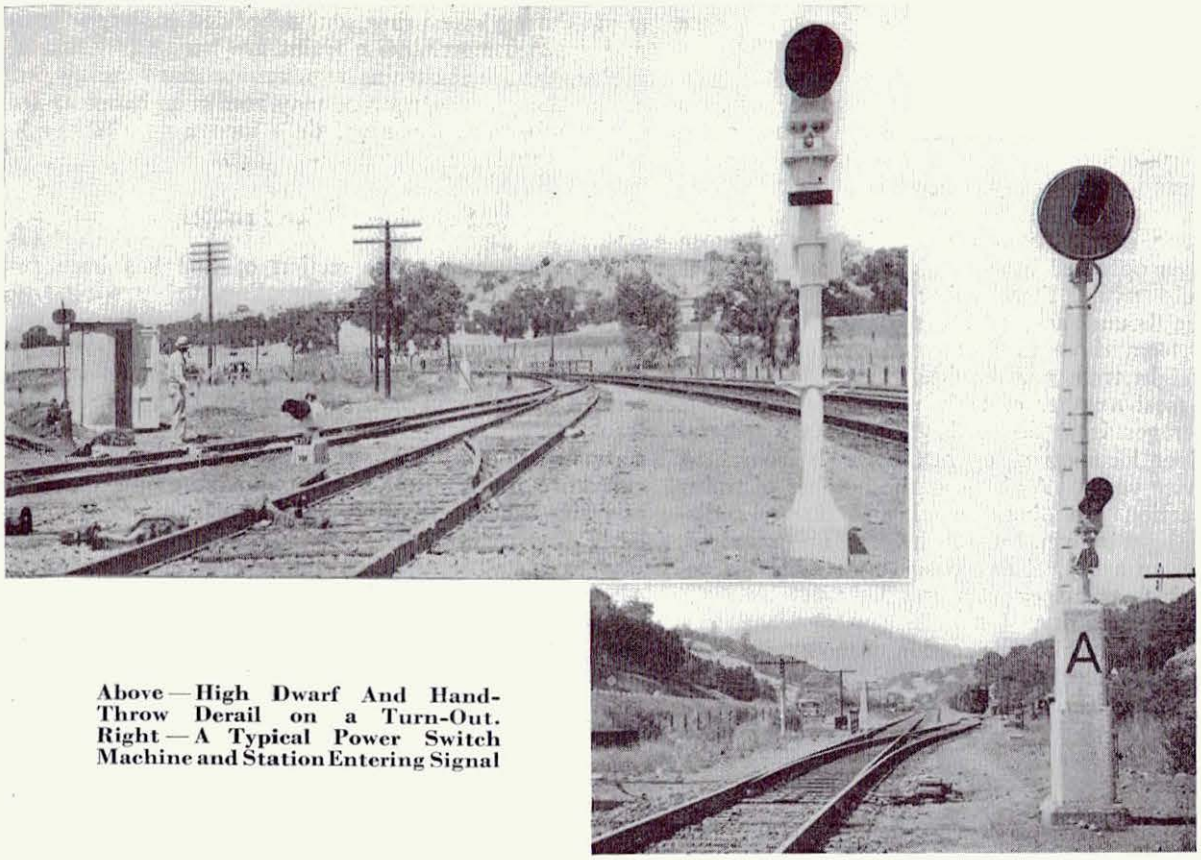
Since December 7, telephone circuits have been set up and equipped for six new train-dispatching districts and 33 additional dispatchers have been employed. Eleven new communication offices have been established and 234 operators and printer clerks hired to take care of the 33 per cent increase in train orders and message traffic; while 17 additional telephone switchboard operators have been employed and 3 new private branch exchanges installed. The department has increased its apprentice operator classes nearly 200 per cent, and is training women as operators. In the first seven months of this year, 45 women were graduated in these classes and placed in service.

Handling Passengers

Because of its transcontinental lines and the establishment of military encampments in large numbers in the Southwest, the Santa Fe is one of the country's outstanding troop carriers. The passenger department has created a number of military bureaus which devote their entire time to co-operating with the Army and Navy in arranging and handling troop movements. The Santa Fe has amply demonstrated its ability to handle emergency passenger traffic. As examples, on July 5, a seven-section train transported 4,919 passengers from San Diego to Los Angeles. On another recent occasion, all buses in the Southern California area were suddenly commandeered, leaving thousands of people stranded. The Santa Fe quickly assembled equipment and handled 6,111 passengers between Los Angeles and San Diego between 4 p. m. and midnight.

On January 1, 1941, the Santa Fe had 1,392 passenger cars in service. Since then, 14 baggage-storage mail cars; 7 baggage cars, and 10 diners have been added. Even with these 10 additional diners, the demand has been so great that a combination service has been established to take care of the overflow at Harvey eating houses along the line.

SALVAGE IN ENGLAND.—To make certain that every scrap of waste material throughout its system shall be saved, the London & North Eastern has appointed in each of its departments a "chief salvage master" who will be responsible for organizing and encouraging the work of salvage collection within the department concerned. Every station, dock, hotel, yard and workshop will have a salvage master, whose duties will be to make the salvage of all materials at their particular place 100 per cent effective. These appointments in no way supersede the company's stringent salvage instructions and are intended merely to cut out small waste which might otherwise be overlooked.



Above—High Dwarf And Hand-Throw Derail on a Turn-Out. Right—A Typical Power Switch Machine and Station Entering Signal

C. T. C. Saves Train Time on the Southern Pacific

New project relieves congestion on a 17-mile bottle-neck, thus expediting operations on an entire division

TO relieve congestion, the Southern Pacific completed the installation of centralized traffic control on a 17-mile single-track section of heavy grades and curvature on August 13. These new signaling facilities immediately reduced the overall time of trains on this section, thereby increasing the capacity of this bottle-neck to the extent that operations have been facilitated on the division as a whole.

Between West and East, the two ends of the new centralized traffic control section, the line crosses a ridge, the crest being in a tunnel 3,600 ft. long. From West the grade ascends for four miles to the summit at varying rates, mostly about 2.2 per cent. Of ten curves, three are 10 deg., three are 7 deg., one is 4 deg. 30 min. and three are 3 deg. From East to the summit, 12.5 miles, the grade ascends at varying rates, with a large proportion between 2 per cent and 2.2 per cent. In this 12.5 miles there are 42 curves, of which 26 are 10 deg. In addition to the tunnel through the summit, there are three other tunnels in this distance, totaling about 2,150 ft. in length. Because of the curvature and grades, speeds are limited to 30 m. p. h. for passenger trains and 18 m. p. h. for freight trains in both directions, except that the limit for passenger trains is 35 m. p. h. for 4.1 miles between Siding No. 4 and East. All freight trains and most of the passenger trains require helper locomotives up the grades.

Track Layout and Train Movements

East is a sub-division point where all freight trains enter and depart from a yard. Helper locomotives are coupled to the freight trains in the yard. Westbound passenger trains hold the main line, and a helper is coupled to the head end. At West a special siding and crossovers are provided to permit helpers to cut in or cut out of trains when on the main track or on the passing track. Between West and East, there are five passing tracks with car capacities as shown on the diagram. At Siding 2, a set of crossovers is provided between the main line and the passing track so that the two portions of this siding can be used separately to hold opposing trains while a third train passes.

The Southern Pacific routes much of its freight and some of its passenger traffic over an alternate line, the section between West and East being a part of a route used primarily for passenger trains, fast merchandise freight trains and other freight trains required in local

service between stations on this line. Five passenger trains are operated in each direction daily. Several months ago, four more passenger trains were removed from the schedule to release equipment and locomotives for other service. From one to as many as four extra sections of certain overnight trains are operated on some nights, the peak being on week-end nights. Other movements require as many as ten or more additional extra passenger trains in a 24-hour period. One merchandise freight train is operated in each direction on passenger train schedule while three other freight trains are scheduled westbound and two eastbound. On heavy traffic days, from three to four extra sections of each scheduled freight train are required.

Thus the total number of train movements over this territory averages from 33 to 36 daily. As a general rule, the helper locomotives operate through from East to West or vice versa. As long as the number of trains in each direction are about equal and properly distributed, no light movements of helpers are required. For example, on a typical day there were only five occasions in which a helper was run light between the two ends of the territory.

For many years this 17-mile section of mountain grade has been the bottleneck which limited the capacity of the entire division. Trains of the same name are scheduled to leave each of two terminals at the same time. On the basis of train time, the territory between East and West is midway between these terminals so that paired trains of opposing directions meet in this section. On account of the heavy curvature and grades, the speeds are limited to the extent that the best possible running time eastbound between West and East is 34 minutes, and westbound 37 minutes. These periods are so long that train schedules cannot be set back or advanced to allow the meets to be made off of this territory. As a result, in this 17-mile section, six of the passenger trains have one scheduled meet, two have two meets and two have three meets. Each of the two overnight merchandise freight trains has three meets.

The three-hour peak is between 12:35 a. m. and 3:13 a. m., during which time four scheduled passenger trains and the two merchandise trains are handled. On some nights, the freight trains require one extra section, and one of the passenger trains may run in as many as four sections in each direction, thus increasing the number of meets and the congestion of trains.

Solution of the Problem

For many years this section of line has been protected by automatic block signaling, the passing track switches being operated by hand-throw stands, and train movements were authorized by time-table and train orders. On account of the mountainous character of the terrain and the tunnels, the addition of a second main track, as a means for increasing track capacity, or the reconstruction of the single-track line to reduce the curvature and grade as a means for increasing the speed of trains when in motion, would be so expensive as to be beyond reason. The only logical solution, therefore, was to install centralized traffic control by means of which a considerable proportion of the train time previously lost in delays could be saved, thus not only reducing the total time for each train, but also getting each train off the territory more quickly, thereby permitting other trains to enter. Thus the capacity of the existing line could be increased.

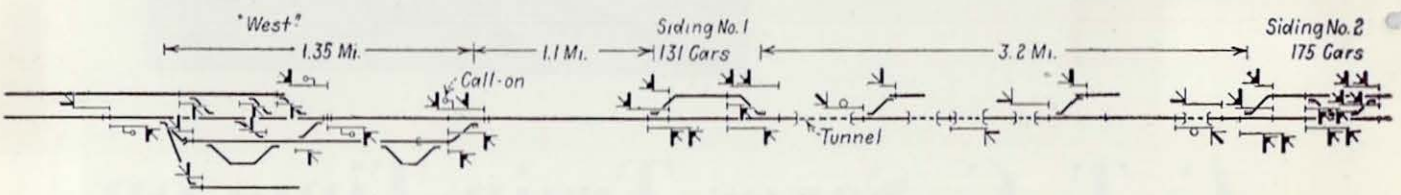
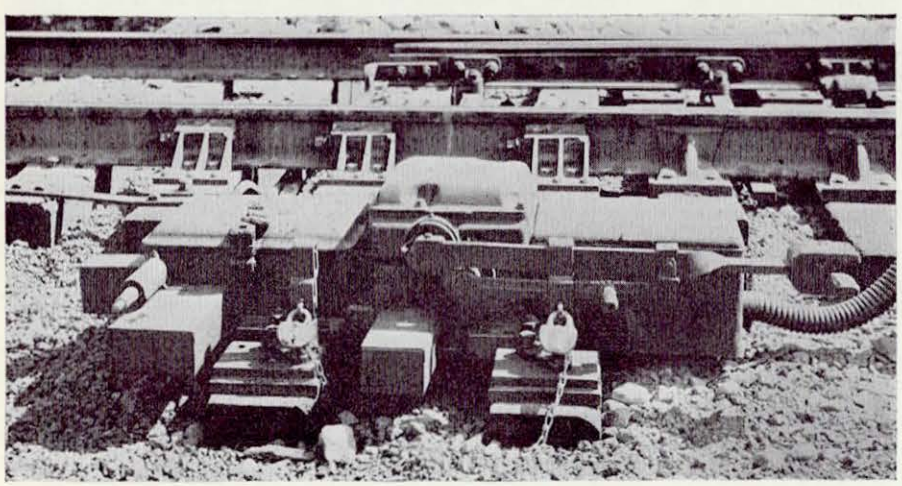
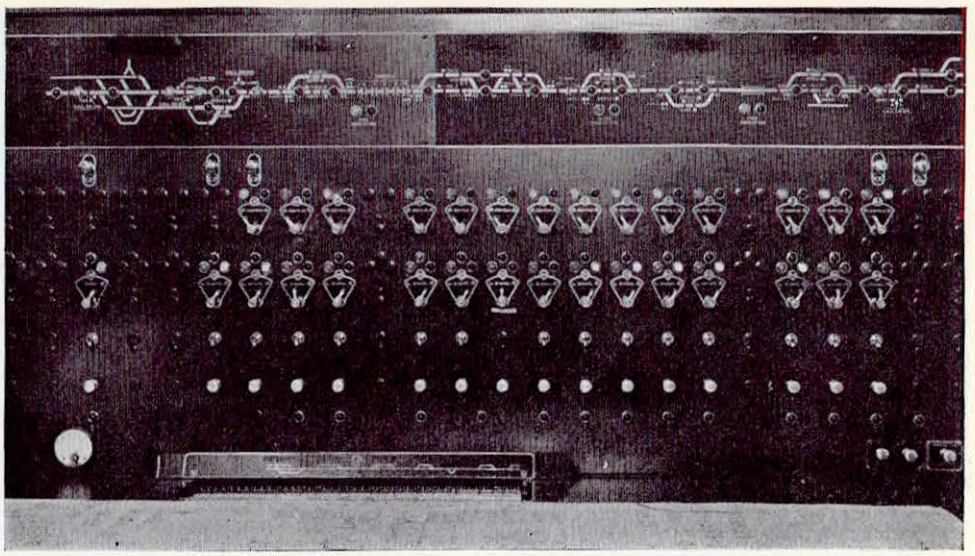


Fig. 1—Plan Showing the Locations of the Tracks, Switches and Signals

Because of the numerous meets between trains, the power switches included in the new centralized traffic control system accomplish a considerable proportion of the total saving in train time. The turnouts are No. 14 so that trains can make diverging moves to or from the main track at speeds up to 25 m. p. h.; therefore, the trains can now enter or depart from passing tracks at normal speed and without stopping to permit the operation of hand-throw stands. Circumstances vary, depending on the grades, the curvature and the length, as well as the direction of trains, but, on the average, the power switch machines save about 4 to 6 minutes when a train is entering a passing track and about 6 to 10 minutes when departing. The signaling is so arranged



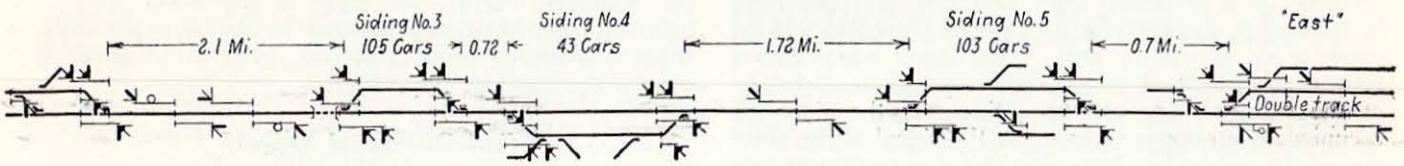
Each Power Switch is Operated by a Dual-Control, Low-Voltage D-C. Switch Machine



The C.T.C. Control Machine Included the Illuminated Track Diagram, 14 Levers for Switches, 16 Levers for Signals, and an Automatic Train Recording Graph

that an engineman is informed whether a passing track is unoccupied when he is heading in. Also, when departing, he is informed whether one, two or more automatic blocks ahead have been cleared by a preceding train.

For these reasons, a train can move out of one pass-



on the New Centralized Traffic Control Territory

ing track over the main line to the next passing track, and get into the clear in approximately 17 minutes less time than such a move could be made previously when hand-throw switches were in service.

Another means for saving time with the centralized traffic control results from the O. S. indication lamps and the automatic train graph on the control machine, by means of which the dispatcher knows of the progress being made by each train, so that he can advance trains for meets at close timing. With one exception, the passing tracks will hold from 103 to 175 cars. Thus, trains can be run through sidings without losing much time. On account of the lengths of the sidings, non-stop meets are numerous. For example, on August 12, two passenger trains, No. 8 eastbound and No. 9 westbound, made a non-stop meet at Siding No. 4, where the capacity of the siding is only 43 cars. The head end of No. 9 passed the east switch at 1:03 p. m. and was in the clear on the passing track at 1:04 p. m. The head end of No. 8 passed the west switch at 1:05 p. m. and the east switch at 1:06 p. m. In the meantime, No. 9 passed through the siding without stopping, and departed from the west switch at 1:06½ p. m. On August 13, these two trains met at Siding No. 2, the head ends of the trains passing their respective "first" switches at practically the same time, and No. 9 going through the passing track, and the meet was made without either train stopping.

Trains No. 8 and No. 9 are scheduled to meet at Siding No. 5 at 2:44 p. m. In the instance on August 12 referred to above, No. 8 was late, and if No. 9 had been held at Siding No. 5 for the meet instead of advancing to Siding No. 4, it would have lost 15 minutes or more. On August 13, No. 8 was late and No. 9 was advanced to Siding No. 3; otherwise it would have been held at Siding No. 4 because time would not have been available under the previous method to enable train orders to be changed to take advantage of changing conditions.

Instances similar to those just described occur numerous times each day, so that, in brief, the centralized traffic control has accomplished the objective for which it was installed; i. e., track capacity has been increased to the extent that all trains offered can now be accepted promptly without delay at either end and can be moved over the section without incurring delays out of proportion to the mileage and physical conditions involved.

Changes in Flagging Rule 99

Field observations showed that much valuable train time and track occupancy was consumed when providing flag protection when trains stopped because in most instances the flagman was required to go back around curves, and the time consumed in returning long distances was excessive. Numerous stops are also made at stations when taking water or when cutting in or cutting out helper locomotives. In view of the fact that the centralized traffic control includes complete automatic block signal protection, it was decided to modify compliance with the flagging Rule 99, so that flagging protection is not now required when a train makes a stop between head blocks at a controlled siding, except for trains carrying passengers. Flagging is required, however, if a train makes an unusual stop at points between stations. On the average this change in the application of Rule 99 saves from 5 to 10 minutes for each stop by a tonnage freight train.

The turnouts at the ends of passing tracks, which are equipped with power machines, are No. 14 with 24-ft. points so that diverging moves to or from the main line can be made at speeds up to 25 m. p. h. which

Investment Bankers Weigh RR Prospects*

PRIVATE capital must realize that the restoration of the credit of the railroads is of prime importance to the maintenance of our capitalistic and free enterprise system.

The present continued lack of interest on the part of private capital—and the pessimistic attitude toward railroad securities in general, as expressed by some financial services, some insurance companies, some banks and a great many individuals investors—would be more alarming if we did not have reasonable grounds to look for a favorable change. We hope this change will occur because we should hate to see government ownership of the railroads and the far-reaching consequences that would follow.

The war is demonstrating in a most emphatic manner how vitally important the railroads are to our country. They are a national necessity and it is most important that our total railroad plant be preserved, maintained and enlarged—not only for future national emergencies, but for all periods of general business activity. This cannot be done unless their credit is properly restored and a proper market again created for their securities.

Where Is the "Excess Capacity" Now?

Where would we be today if that part of our railroad plant that was not being used a few years ago had been junked and the securities representing it wiped out? That was the solution that was at that time suggested by a great many people. A recent editorial in *Railway Age* says:

"A realistic national transportation policy must recognize the national necessity of maintaining for periods of national emergency a large and efficient railway plant—even if in other periods a large part of it is to be considered merely stand-by plant. It must also recognize that such a plant cannot be assured in periods of emergency unless in all periods there is available enough income to provide and maintain it—including the stand-by part, if such a part there must be."

We all know that gross revenues of the railroads are making new highs and it is also true that the companies have placed themselves in stronger financial condition than ever before. All of this, however, is ignored by investors. Few are interested in these high earnings, because they are considered temporary and due entirely to the war production program. Earnings may not continue at the present high rate after the war, although we must remember that the railroads will have to play a very important part in the general world-wide rehabilitation program that will follow. Therefore we can reasonably expect earnings substantially better than seem to be indicated by the present investment opinion of railroad securities.

The answer to the present pessimistic attitude seems to lie in the fear of increased and ruinous competition after the war—principally from the air lines. Of course the railroads will lose some light freight traffic and a lot of passenger traffic to the air lines and we predict a great development in this form of transportation. However, we believe that much too fantastic pictures are being painted. Our imaginations are being stimulated and it becomes easy to exaggerate the possibilities of cargo planes in moving large volumes of freight. There still is also a tendency to exaggerate the loss of business to the trucks—most of which took place some years ago.

What Will Air Competition Do?

The backbone of the railroad business has been the long-haul mass transportation of heavy and bulky freight. Neither airplanes nor trucks can compete successfully in this field. The short-haul and package freight, although profitable, formed a relatively minor part of the railroad business and this is also true of the passenger business. The financial difficulties of the railroads caused by the low earnings of recent years were due primarily to the extensive collapse in heavy traffic.

W. A. Patterson, president of the United Air Lines, and recognized as one of the leading authorities on aviation, recently gave to the chairman of this committee a statement on the question, "Will the airplane supplant the railroads?" We are attaching a copy of his complete statement and making it a part of this report. We urge everyone interested in railroad securities to read his statement. It speaks for itself.

In the future the railroads will continue to have periods of boom and prosperity and some periods of depression just like many other basic industries (such as the steel industry) but their earnings should fluctuate less than in many industrial fields. The outlook for the railroads depends, of course, on general business conditions and when, for example, the airlines are enjoying prosperous times the rails will probably also have good business.

The great increase in the efficiency of operation of the railroads is still not fully appreciated. In previous reports we have listed various examples and in this brief report we will not repeat them. Fairman Dick, a member of this committee, said in a recent article: "Never in railroad history has the pace of improvement in efficiency of operation been as fast as in the last ten years—Class I Railroads in 1929 had operating earnings of $1,200 million. If they had been able to operate at that time with the efficiency they showed in 1941 they would have earned $2,400 million."

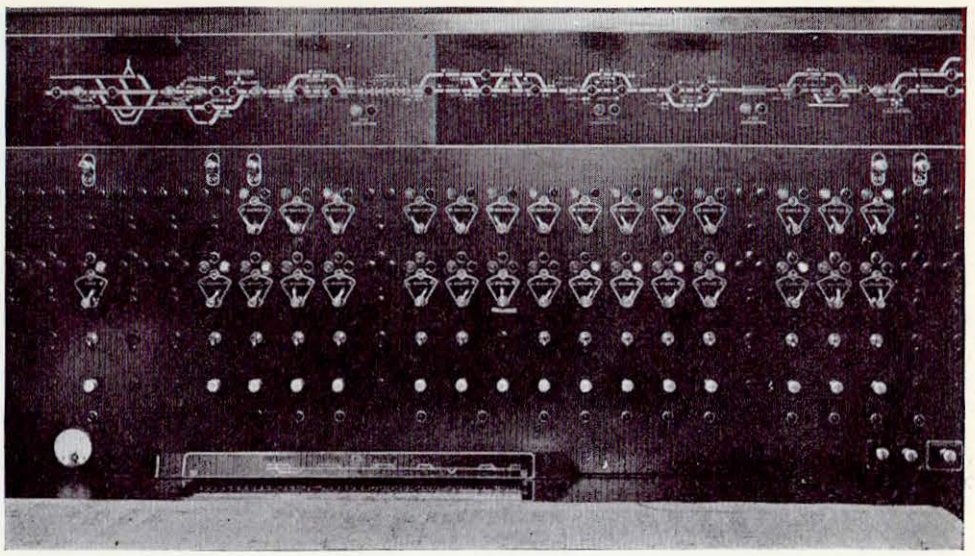
Improved Railroad Efficiency

Along this same line, Ernest E. Norris, president of the Southern Railway, said: "The war is having an effect on the railroads that guarantees the future of the industry. We are learning to do things that we never dreamed were possible. And the urgent necessity for getting more use out of our plant, out of our cars and locomotives is stimulating the inventiveness, the ingenuity and the resourcefulness of everyone connected with the railroad business. The railroads will come out of the war with the respect and confidence of a grateful people. They will have the most efficient plant they have ever had. They will have the best trained personnel in railroad history. They will have the most effective techniques ever devised for the transport service of a nation. They will have perfected machinery for cooperation between those who operate and those who use the railroads. And they will have a record of achievement that will make a shining page in history."

We now want to call attention to important pieces of legislation that are pending. The Senate included certain provisions in the tax bill just passed which are of great importance to the railroads and which should greatly help railroad credit.

1. A provision for the preservation of the old prop-

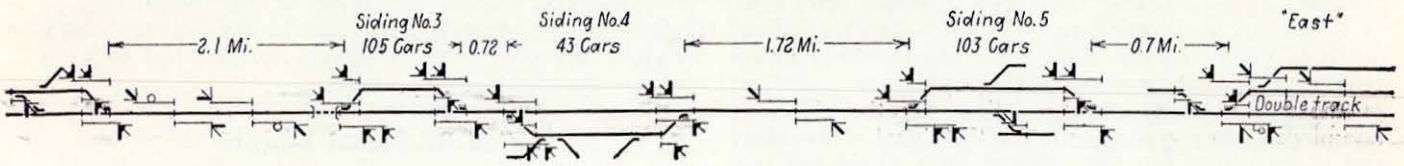
* This article is the report, practically in its entirety, of the Railroad Securities Committee (John S. Loomis, chairman) of the Investment Bankers' Association of America, presented at the recent convention of that association.



The C.T.C. Control Machine Included the Illuminated Track Diagram, 14 Levers for Switches, 16 Levers for Signals, and an Automatic Train Recording Graph

that an engineman is informed whether a passing track is unoccupied when he is heading in. Also, when departing, he is informed whether one, two or more automatic blocks ahead have been cleared by a preceding train.

For these reasons, a train can move out of one pass-



on the New Centralized Traffic Control Territory

ing track over the main line to the next passing track, and get into the clear in approximately 17 minutes less time than such a move could be made previously when hand-throw switches were in service.

Another means for saving time with the centralized traffic control results from the O. S. indication lamps and the automatic train graph on the control machine, by means of which the dispatcher knows of the progress being made by each train, so that he can advance trains for meets at close timing. With one exception, the passing tracks will hold from 103 to 175 cars. Thus, trains can be run through sidings without losing much time. On account of the lengths of the sidings, non-stop meets are numerous. For example, on August 12, two passenger trains, No. 8 eastbound and No. 9 westbound, made a non-stop meet at Siding No. 4, where the capacity of the siding is only 43 cars. The head end of No. 9 passed the east switch at 1:03 p. m. and was in the clear on the passing track at 1:04 p. m. The head end of No. 8 passed the west switch at 1:05 p. m. and the east switch at 1:06 p. m. In the meantime, No. 9 passed through the siding without stopping, and departed from the west switch at 1:06½ p. m. On August 13, these two trains met at Siding No. 2, the head ends of the trains passing their respective "first" switches at practically the same time, and No. 9 going through the passing track, and the meet was made without either train stopping.

Trains No. 8 and No. 9 are scheduled to meet at Siding No. 5 at 2:44 p. m. In the instance on August 12 referred to above, No. 8 was late, and if No. 9 had been held at Siding No. 5 for the meet instead of advancing to Siding No. 4, it would have lost 15 minutes or more. On August 13, No. 8 was late and No. 9 was advanced to Siding No. 3; otherwise it would have been held at Siding No. 4 because time would not have been available under the previous method to enable train orders to be changed to take advantage of changing conditions.

Instances similar to those just described occur numerous times each day, so that, in brief, the centralized traffic control has accomplished the objective for which it was installed; i. e., track capacity has been increased to the extent that all trains offered can now be accepted promptly without delay at either end and can be moved over the section without incurring delays out of proportion to the mileage and physical conditions involved.

Changes in Flagging Rule 99

Field observations showed that much valuable train time and track occupancy was consumed when providing flag protection when trains stopped because in most instances the flagman was required to go back around curves, and the time consumed in returning long distances was excessive. Numerous stops are also made at stations when taking water or when cutting in or cutting out helper locomotives. In view of the fact that the centralized traffic control includes complete automatic block signal protection, it was decided to modify compliance with the flagging Rule 99, so that flagging protection is not now required when a train makes a stop between head blocks at a controlled siding, except for trains carrying passengers. Flagging is required, however, if a train makes an unusual stop at points between stations. On the average this change in the application of Rule 99 saves from 5 to 10 minutes for each stop by a tonnage freight train.

The turnouts at the ends of passing tracks, which are equipped with power machines, are No. 14 with 24-ft. points so that diverging moves to or from the main line can be made at speeds up to 25 m. p. h. which

in general is near the maximum train speed on the main line in much of this territory. On account of the numerous curves and mountains, the engineman of an approaching train which is to take siding cannot see whether the siding is occupied. When the switch is reversed for a train to take siding, it is necessary to provide a signal to govern movements over the switch in the reverse position. In addition to indicating that the power-operated switch is locked in the reverse position and the track section over the switch is not occupied, this signal also indicates whether the siding is unoccupied or occupied by a preceding train. Referring to Fig. 2, if the switch is reversed for a train to enter the passing track and that track is unoccupied, the lower unit of station-entering signal 5 displays a green aspect under a red in the top unit, which authorizes the train to head in and stop in the clear on the siding. Advance information is given by the display of a yellow aspect on the distant signal 7. If any part of the siding is occupied by a preceding train, and a second train is to be headed in, the lower arm of signal 5 displays yellow, under a red in the top unit. This aspect warns that a train is to head in at slow speed, prepared to stop short of the train already on the siding. If the siding is occupied by an opposing train, or the signal at the other end of the siding has been cleared for a movement into the siding, signal 5 cannot be cleared and displays its most restrictive aspect, red over red.

If the sighting distance in approach to the station-entering signal 5 is adequate, advance information for either of the two circumstances explained above is given by a yellow aspect on the distant signal 7. If local conditions are such that the sighting distance to signal 5 is short, when signal 5 displays an aspect of green under red for a diverging move into an unoccupied passing track, then distant signal 7 displays a yellow over green aspect, but if signal 5 displays an aspect of yellow under red for a diverging move into an occupied passing track, then distant signal 7 displays an aspect of yellow only. Thus, if the passing track is not occupied, a freight train can proceed prepared to head in on the passing track rather than reducing speed prepared to stop short of signal 5. The extra lower unit on the distant signal is normally extinguished, being lighted only under the circumstances explained above.

The previous semaphore automatic block signals were removed, and the new installation includes searchlight-type signals for the semi-automatic signals at the passing tracks as well as the intermediate signals. All of the relays as well as line control circuits were installed new as a part of the C. T. C. project.

Referring to Fig. 2, the leave-siding signals, such as No. 3 and No. 4, are capable of displaying three aspects. For a following train movement, if a train has passed signal 8 and is occupying that block, and if a control is sent out to cause a Proceed aspect to be displayed on leave-siding signal 4, with a preceding train occupying the block of automatic signal No. 8, signal 4 will then display an Approach aspect, yellow. On the other hand, if the preceding train is beyond automatic signal 10, signal 4 would then display the Clear aspect, green. The use of the three aspects, red, yellow and green, as compared with the practice of only red or yellow, affords the advantage that when a green aspect is displayed the engineman knows that two or more blocks ahead are unoccupied, and that he can pull out and accelerate to normal speed, assured that he will not need to approach signal No. 8 prepared to stop.

No Red With a Green

A special practice on the Southern Pacific is that on a two-unit signal, such as station-entering signal 5, if the line-up is for a through move on the main line with a green aspect in the top unit, the lamp in the lower unit is not then lighted, this being different from the conventional practice of a red light also in the lower unit. The thought on the Southern Pacific is that a clear aspect should not include a red light because an engineman might see this red light before he saw the green, and thus cause confusion in his mind. Thus on the Southern Pacific, the lamp in the lower unit is lighted in combination with that in the top unit only when a diverging route is set up, or as a red under a red for the absolute stop aspect.

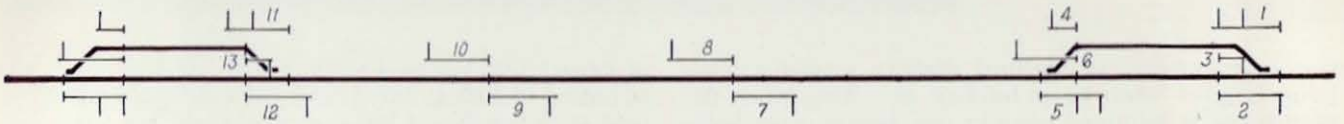


Fig. 2—Typical Signaling Arrangement

Call-On Signal Aspects

At some of the stations, such as East, where a helper locomotive must pass an absolute signal displaying a Stop aspect in order to be coupled to a standing train, a special C. T. C. controlled call-on signal is provided for authorizing the helper to move into the occupied block. This aspect is given by a third lamp unit mounted on the mast below the other two units. Normally the lamp is extinguished, but, when a couple-up move is to be made, control is sent out from the office and the helper locomotive is moved on to a short track circuit about 50 ft. long in approach to the signal, at which time the signal displays red in each of the two upper units and a flashing yellow in the special bottom unit. The reason for making the track circuit short is to force the helper locomotive to come to a stop or reduce to very low speed before the flashing yellow call-on aspect will appear. An additional feature is that the train must have occupied the station-limit track circuit for more than a minute and a half, which checks that that train must be stopped before the call-on aspect can be displayed for the helper locomotive.

Signal Protection at Hand-Throw Turnouts

At the main-line turnouts which are not equipped with power switch machines, but which are still operated by hand-throw stands, a high-dwarf signal is located opposite the clearance point to govern moves to the main line. A telephone is provided at each of these locations so that the conductor of a train on the siding can secure information from the dispatcher to insure that the movement of the train on to the main line will not interfere with other trains.

Providing the dispatcher has not sent out controls to clear either of the semi-automatic signals admitting trains to the section, including the hand-throw switch,

the two two-wire line control circuits between passing tracks are energized. Under these circumstances, when a trainman operates the stand to remove the derail from the track on the turnout, and operates the hand-throw stand to reverse the main-line switch, the signal will display a Proceed aspect to authorize the train to occupy the main track.

C. T. C. Machine Is Portable

The office building in which the C. T. C. control machine is located is of one-story frame construction. In consideration of the fire hazard, the C. T. C. control machine is mounted on large-sized casters 6 in. in diameter, so that in case of fire it can easily be pulled out of the building, a set of double doors being provided for this purpose. A detachable plug connection for incoming wires is provided on the machine as a quick disconnect feature.

All of the C. T. C. apparatus, other than that in the machine, is contained in fire-proof housings remote from the station building, and a multiple emergency cable with plug-in connectors is available so that, after the machine is out of the station, this cable can be connected and the system cut in service.

Indicators for Users of Motor Cars

On account of the numerous train movements and the short sighting distances, indicators which show whether a train is approaching, were installed at numerous points on this territory so that track forces, maintainers and others using motor cars can know when they can proceed with safety. These indicators are similar in construction and appearance to those ordinarily used as switch indicators on some roads. The locations and the spacings of the indicators are based on the practice that, having seen an indicator displaying clear, a man on a motor car has time to proceed at about 15 m. p. h. to the next indicator and set his car off the track before any train traveling at normal speed might arrive. When the track within the limits of control is not occupied, the corresponding indicator is normally energized to display Clear. Thus the operator of a motor car is not required to stop to push a button before gaining the information needed.

Power Switches Well Constructed

Previously the main-track switches in this territory were operated by hand-throw stands, with the exception that spring mechanisms with mechanical facing-point locks were in service at the ends of double track, as well as at the north switch at Siding No. 4 and at both of the switches at Siding No. 3. As a part of the C. T. C. project, Type-M-22A dual-control low-voltage d-c. electric switch machines were installed at all passing tracks and at the ends of double track. In order to facilitate operation by minimizing friction, each set of switch points is equipped with a set of roller bearings which normally support the points free of the slide plates. The weight of a car or locomotive works against spring action to push the points down onto the slide plates.

At each power switch, three 1-in. by 9-in. insulated gage plates were installed with Racor adjustable rail braces. Two of these plates extend out under the switch machine, which fits snugly between toe plates; thus lost motion between the rails and the machine is prevented. The toe plates and the riser plates at the rails are welded in place.

This installation of centralized traffic control was planned and installed by the signal forces of the Southern Pacific under the direction of R. D. Moore, signal engineer.

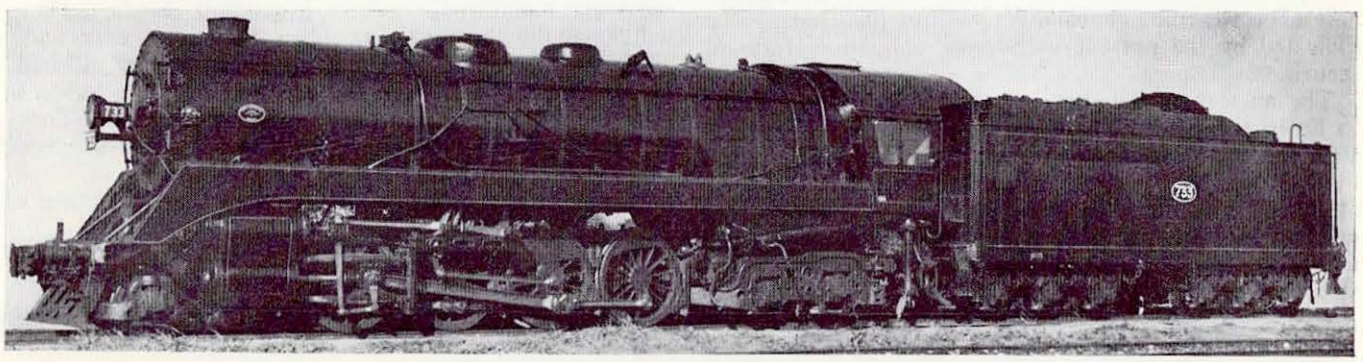
The major items of signaling equipment were furnished by the Union Switch & Signal Company.

Australian Railway Builds Own Locomotives

AT the Islington workshops of the South Australian Railways, normal locomotive repair operations are now being supplemented by the construction of shells, tools, gages, gun mountings for tanks, machine gun carriers, aircraft parts and a large machine building program in addition to the construction of new locomotives, passenger and freight cars. The shops are working 24 hours a day for six and, in some instances, seven days a week.

Rail traffic has increased over 38 per cent on the South Australian Railways during the last three years, and the increased motive power requirements have been met largely by quicker turn round at terminals, reduced shopping time and transferring certain maintenance operations from other points to the Islington workshops.

The illustration shows one of nine South Australian 720-Class locomotives now being built at Islington and, within the next few months, it is planned to begin the construction of seven 4-8-4 type locomotives which will be equipped with roller bearings throughout. The first of these locomotives will be fired with pulverized semi-bituminous coal, of which large supplies are available. It is planned to conduct extensive service tests of this locomotive.



One of Nine 2-8-4 Type Locomotives Now Being Built at the Islington Workshops of the South Australian Railways

Investment Bankers Weigh RR Prospects*

PRIVATE capital must realize that the restoration of the credit of the railroads is of prime importance to the maintenance of our capitalistic and free enterprise system.

The present continued lack of interest on the part of private capital—and the pessimistic attitude toward railroad securities in general, as expressed by some financial services, some insurance companies, some banks and a great many individuals investors—would be more alarming if we did not have reasonable grounds to look for a favorable change. We hope this change will occur because we should hate to see government ownership of the railroads and the far-reaching consequences that would follow.

The war is demonstrating in a most emphatic manner how vitally important the railroads are to our country. They are a national necessity and it is most important that our total railroad plant be preserved, maintained and enlarged—not only for future national emergencies, but for all periods of general business activity. This cannot be done unless their credit is properly restored and a proper market again created for their securities.

Where Is the "Excess Capacity" Now?

Where would we be today if that part of our railroad plant that was not being used a few years ago had been junked and the securities representing it wiped out? That was the solution that was at that time suggested by a great many people. A recent editorial in *Railway Age* says:

"A realistic national transportation policy must recognize the national necessity of maintaining for periods of national emergency a large and efficient railway plant—even if in other periods a large part of it is to be considered merely stand-by plant. It must also recognize that such a plant cannot be assured in periods of emergency unless in all periods there is available enough income to provide and maintain it—including the stand-by part, if such a part there must be."

We all know that gross revenues of the railroads are making new highs and it is also true that the companies have placed themselves in stronger financial condition than ever before. All of this, however, is ignored by investors. Few are interested in these high earnings, because they are considered temporary and due entirely to the war production program. Earnings may not continue at the present high rate after the war, although we must remember that the railroads will have to play a very important part in the general world-wide rehabilitation program that will follow. Therefore we can reasonably expect earnings substantially better than seem to be indicated by the present investment opinion of railroad securities.

The answer to the present pessimistic attitude seems to lie in the fear of increased and ruinous competition after the war—principally from the air lines. Of course the railroads will lose some light freight traffic and a lot of passenger traffic to the air lines and we predict a great development in this form of transportation. However, we believe that much too fantastic pictures are being painted. Our imaginations are being stimulated and it becomes easy to exaggerate the possibilities of cargo planes in moving large volumes of freight. There still is also a tendency to exaggerate the loss of business to the trucks—most of which took place some years ago.

What Will Air Competition Do?

The backbone of the railroad business has been the long-haul mass transportation of heavy and bulky freight. Neither airplanes nor trucks can compete successfully in this field. The short-haul and package freight, although profitable, formed a relatively minor part of the railroad business and this is also true of the passenger business. The financial difficulties of the railroads caused by the low earnings of recent years were due primarily to the extensive collapse in heavy traffic.

W. A. Patterson, president of the United Air Lines, and recognized as one of the leading authorities on aviation, recently gave to the chairman of this committee a statement on the question, "Will the airplane supplant the railroads?" We are attaching a copy of his complete statement and making it a part of this report. We urge everyone interested in railroad securities to read his statement. It speaks for itself.

In the future the railroads will continue to have periods of boom and prosperity and some periods of depression just like many other basic industries (such as the steel industry) but their earnings should fluctuate less than in many industrial fields. The outlook for the railroads depends, of course, on general business conditions and when, for example, the airlines are enjoying prosperous times the rails will probably also have good business.

The great increase in the efficiency of operation of the railroads is still not fully appreciated. In previous reports we have listed various examples and in this brief report we will not repeat them. Fairman Dick, a member of this committee, said in a recent article: "Never in railroad history has the pace of improvement in efficiency of operation been as fast as in the last ten years—Class I Railroads in 1929 had operating earnings of $1,200 million. If they had been able to operate at that time with the efficiency they showed in 1941 they would have earned $2,400 million."

Improved Railroad Efficiency

Along this same line, Ernest E. Norris, president of the Southern Railway, said: "The war is having an effect on the railroads that guarantees the future of the industry. We are learning to do things that we never dreamed were possible. And the urgent necessity for getting more use out of our plant, out of our cars and locomotives is stimulating the inventiveness, the ingenuity and the resourcefulness of everyone connected with the railroad business. The railroads will come out of the war with the respect and confidence of a grateful people. They will have the most efficient plant they have ever had. They will have the best trained personnel in railroad history. They will have the most effective techniques ever devised for the transport service of a nation. They will have perfected machinery for cooperation between those who operate and those who use the railroads. And they will have a record of achievement that will make a shining page in history."

We now want to call attention to important pieces of legislation that are pending. The Senate included certain provisions in the tax bill just passed which are of great importance to the railroads and which should greatly help railroad credit.

1. A provision for the preservation of the old prop-

* This article is the report, practically in its entirety, of the Railroad Securities Committee (John S. Loomis, chairman) of the Investment Bankers' Association of America, presented at the recent convention of that association.

erty basis of railroads going through reorganization. This is important in determining the excess profits tax exemption based on invested capital and in measuring depreciation.

2. A provision which prevents a railroad from incurring an income tax liability due to a scale down of debt in reorganization.

3. Permission for all corporations to purchase their own bonds at less than par without incurring an income tax liability on the "profit" represented by the discount. The new law strikes out the provision in the existing law requiring a showing of financial unsoundness.

It is hoped and expected that these provisions will be retained in the final bill.

This report may seem somewhat "bullish" in spots but that wasn't our purpose. There are still plenty of problems confronting the railroads, but the point we want to stress is that because they are so essential to the industrial life of our country it is most important that they be kept on a sound financial and operating basis and that private capital do the job. The government now recognizes the importance of the railroads and the necessity for their financial soundness. We hope this viewpoint will continue after the war.

[The statement by President Patterson of United Air Lines follows:]

Air Transport Costs Still High

"The importance of the airplane as a combat instrument in modern warfare and as a transport medium for the strategic movement of critical supplies required in the conduct of war is well known and cannot be overemphasized. Consideration of these facts gives natural rise to enthusiastic speculation regarding the post-war possibilities of commercial air transportation. Visions of huge air liners and towed glider 'sky trains' carrying a major share of the world's commerce over sea and land are everywhere being publicized today in newspaper and magazine articles and in public utterances.

"When using present wartime publicity as a basis for evaluating the peacetime future of commercial air transport it should be remembered that the dollar sign is a very unimportant part of the wartime transport formula. In peacetime commerce, however, the dollar cost of transportation becomes all important. In order to accomplish transportation by air it is necessary to pay the cost of overcoming the force of gravity in addition to the cost of forward propulsion. It is very easy to run into a situation where the weight of aircraft fuel required exceeds the weight of the payload that can be carried. In some operations, in fact, the capacity of surface carriers needed to supply fuel for an air operation would be more than sufficient to accommodate the air cargo in the first place. At present the cost of transport by air is between 30 and 50 times the cost of transport of the bulk of commodities by surface means.

Railroads Will Also Improve

"Undoubtedly, future technological development will make possible a great reduction in the cost of flying an airplane. But the aircraft industry has by no means a corner on all the brains in the country. The railroads too can, and undoubtedly will, cut their costs by means of engineering and operating advances permitting greater speeds and increased plant and equipment utilization. In aviation, operating costs are higher in relation to fixed costs than in other forms of transportation and therefore increased volume should have a lesser importance among the possibilities for cost reduction. While towed gliders have a significant strategic importance in combat operations, and may find application in certain commercial situations, the 'sky train' cannot be relied upon as a producer of tremendous savings in the cost of moving things by air. There appears to be no magic cost saving in cutting an airplane up into little pieces and then tying the pieces together.

Plane's Advantage Is In Time-Saving

"Compared to other transport media the airplane can claim a rate premium based largely on the value of the time it saves. An individual is easily persuaded that his time is worth the added cost of air travel, especially when this factor is considered in conjunction with convenience, comfort, and such other intangibles as the romance and prestige associated with travel by air. But an inanimate piece of cargo presents a different problem. Here the time saved must be business time, and it must be strictly worth the saving. A large number of important centers are served by overnight surface transport—what advantage is to offset the higher cost of the airplane there? And for the large bulk of commodities, speed in transit is a relatively unimportant consideration, the most important factor being the rate of flow, merely the laying down at destination of a given number of tons per month. The airplane cannot hope to compete in this field, which constitutes by far the majority of the cargo now transported by the steamships and the railroads.

"The future of the airplane in commerce is indeed great, but it appears that this future will be realized without serious embarrassment to the steamship lines or to the railroads. The volume of domestic air cargo could increase one hundred-fold and yet capture only one tenth of one per cent of the freight-ton miles now carried by the American railroads. And that is without considering the airplane's real contribution to the picture, the creation of its own market, the people and the merchandise that could never move at all were it not for the speed in transit that the airplane makes possible. Our economy demands the services of all the various types of transport media, each fulfilling the requirements peculiar to its own inherent characteristics. It would appear that the airplane cannot supplant, but instead will supplement the railroads."

What Coal Equivalents Do To Fuel Performance Records

(*Continued from page 693*)

gasoline or Diesel fuel could at any time return to the use of coal without affecting the values of the fuel performance units on the territory in question."

The report was signed by E. E. Ramey (chairman), fuel engineer, B. & O., Baltimore, Md.; P. E. Buettell, fuel supervisor, C. M. St. P. & P., Chicago; J. G. Crawford, fuel engineer, C. B. & Q., Chicago; J. R. Jackson, engineer of tests, Mo. Pac., St. Louis, Mo.; H. Morris, superintendent fuel and locomotive performance, C. of N. J., Jersey City, N. J.; E. G. Sanders, fuel conservation engineer, A. T. & S. F., Topeka, Kan.; W. R. Sugg,* superintendent fuel conservation and lubrication, Mo. Pac., St. Louis, Mo.; W. J. Tapp, supervisor fuel conservation, D. & R. G. W., Denver, Colo.; R. J. Tucker, assistant to fuel supervisor, C. & O., Richmond, Va., and R. S. Twogood, fuel engineer, Sou. Pac., San Francisco, Calif.

* Mr. Sugg is now general supervisor of air brakes at St. Louis.

Railroads-in-War News

Junking Objectors Will Get Hearing

No more lines to be torn up until ODT weighs protests of complainants

Because of complaints based on the "summary character" of previous procedures, the Office of Defense Transportation will hereafter give interested parties an opportunity to protest against action to requisition rail on "non-essential" lines before ODT certifies such action to the War Production Board. As explained in an October 25 statement from Director Eastman, the new procedures provide that WPB requests for certification will be made public by ODT; the latter will then issue an examiner's proposed report which will be subject to comment and criticism from interested parties.

The proposed reports will be made by Interstate Commerce Commission Examiner Ralph H. Jewell, who has been loaned to ODT. If possible they will be made within one week after requests for certification has been received and made public. "This report," the announcement went on, "will at once be made public and copies will be transmitted with the utmost expedition to those who have made request therefor. An opportunity will be given to send in writing to the Office of Defense Transportation, on or before a date specified in the report and which will be not less than two weeks from the date it is made public, comments and criticisms upon either the facts stated in the report or upon the recommendations. If desired these comments and criticisms may be presented by representatives of the protestants in person to Mr. Jewell within the period stated. After receipt of any such statement in writing, the Office of Defense Transportation will as soon as possible make its certification to the War Production Board."

Mr. Eastman pointed out that WPB asks ODT "to make a quick survey of each line as to which requisitioning is proposed for the purpose of certifying whether the track in question is or is not essential to transportation service during a war economy." The ODT director emphasized that this question is not as broad as that upon which the I. C. C. passes in determining whether "public convenience and necessity" permit an abandonment. He does believe, however, that ODT should consider "not only whether the line is useful for the transportation of critical war materials, munitions, troops, and the like, but also whether it performs other service which is of essential importance from the standpoint of the general public interest." Nevertheless, the conclusions reached "must, of course, be related to war conditions."

Mr. Eastman also reiterated his previously-expressed view that "the owning railroad company remains under obligation to resume operations whenever it is possible to replace the rails, unless and until authority to abandon is obtained from the commission." He also stressed the "great need" of the military services for relay rails, and noted how I. C. C. abandonment procedures have been considered "too slow." Thus the exercise of the war powers under which WPB is proceeding.

New Title for WPB's Railroad Salvage Director

B. C. Bertram is now chief of the Railroad Unit, Conservation Division, War Production Board, his title having been changed from that of salvage director for railroads.

U. S. Chamber Sponsors Railroad Broadcast

Present achievements and post-war potentialities of the railroad industry will be discussed by Eric A. Johnston, president of the United States Chamber of Commerce, and R. V. Fletcher, vice-president of the Association of American Railroads, in the November 5 program of the Chamber's "Victory—and You" series. The program will be carried on the 206 stations of the Mutual Broadcasting System from 9:15 to 9:30 p. m.

WMC Representative for Training in Transport

Labor training problems of the transportation and non-ferrous mining industries will be dealt with directly by a specially appointed representative of the Apprentice and Training Services of the War Manpower Commission, Chairman Paul V. McNutt announced October 28. The representative is Edward E. Goshen, with headquarters at Denver, Colo., who will continue also his present work of supervising the two Western Apprentice and Training Service regions.

Mr. Goshen, the announcement said, "will work in close collaboration with the Office of Defense Transportation, which he has served for several months as training advisor." Problems directly or indirectly involving training of workers on the job submitted by railroads, over-the-road truck and bus lines, local bus, street car, subway and elevated services, taxicab companies, and waterway transportation facilities will be referred to him.

Mr. Goshen, a printer by trade, has taken "an active part in the labor movement in Colorado and neighboring states." He was secretary-treasurer of the Denver Typographical local for eleven years.

Byrnes to Decide Wage Case Routine

Leiserson asks the economic director to set procedure for railway disputes

Director Byrnes of the Office of Economic Stabilization is expected shortly to outline OES policy with respect to railroad wage proceedings for the guidance of the National Mediation Board and other interested agencies. A request for the policy statement has come to Mr. Byrnes from Dr. William M. Leiserson, chairman of the National Railway Labor Panel, which was set up by President Roosevelt's May 21 executive order to provide wartime procedures whereby labor-management disputes in the railroad industry could be submitted to emergency fact-finding boards without the necessity for the taking of a strike vote among the labor organizations involved.

Meanwhile Dr. Leiserson has deferred action on a request he has received from the Brotherhood of Locomotive Firemen & Enginemen for the appointment of an emergency board to investigate the dispute over the proposed new basis for computing the wages of engineers and firemen on Western lines. The Brotherhood of Locomotive Engineers is expected to join in this request, while Dr. Leiserson also has under consideration the appointment of an emergency board to investigate wage and vacation disputes on five roads—the Columbus & Greenville, Georgia & Florida, New York, Ontario & Western, Wichita Falls & Southern, and Meridian & Bigbee River. Mr. Byrnes' pronouncement will also have a bearing on the pending wage demands of the non-operating unions, which have not yet emerged from the individual-road conferences to the regional or national negotiation stage.

As noted in the *Railway Age* of October 10, page 572, President Roosevelt's October 3 order setting up the Office of Economic Stabilization extended the functions of the National War Labor Board to "all industries and all employees," but at the same time it stipulated that nothing in it shall be construed as affecting "the adjustment procedures of the Railway Labor Act." Thus railway wage cases can still go through the usual procedures, but final settlements must be approved by WLB.

Dr. Leiserson's request for the statement of policy is understood to have been made with a view to eliminating any necessity for action by WLB or Director Byrnes in revising settlements reached in railway cases which have gone through Railway

(*Continued on page 706*)

Striving to Trim Down Cross-Hauls

WPB and ODT seek to induce buyers to get supplies close to home

Large savings in the elimination of cross-hauling by railroad and truck have already been achieved by several industries working voluntarily in cooperation with industry branches of the War Production Board, Director Eastman of the Office of Defense Transportation told an October 22 press conference. ODT has established "very close" cooperation with WPB on the matter; and while the former has not yet been asked to implement the voluntary set-up, Mr. Eastman suggested that such a request may come later.

The ODT director called the press conference to discuss the certificate-of-war necessity plan for commercial motor vehicles, which becomes effective November 15. Because he wanted to get over to motor vehicle operators a message stressing the necessity for obtaining certificates before the deadline, he was reluctant to get into such "more alluring" subjects as cross-hauling and prospects for travel rationing. Nevertheless he did take on the cross-hauling question, recalling that he had discussed it in a recent address at Boston, Mass.

In that speech, Mr. Eastman went on, he cited the May study of one-day's traffic, which ODT thought was typical but which is being checked against a day in September. It is the ODT director's view that cross-hauling is not a matter that can be controlled from the transportation phase alone, because it involves such other questions as plant capacity, raw material supply, manpower supply, quality of products, etc. In the cooperative arrangements it has established with WPB, the ODT supplies the former with traffic-flow charts and maps, which are used by WPB industry committees in their studies of what might be accomplished by specific industries. Results achieved in this way through the voluntary cooperation of the pulp and paper, newsprint, alcohol, chlorine, cement, and chemical industries were what Mr. Eastman had in mind when he mentioned the savings already achieved. He thinks that total possible savings "are quite likely to be substantial," although "not of great magnitude."

It was when he was asked about the prospects for travel rationing that Mr. Eastman said he was afraid he wouldn't get over his message to the motor vehicle operators if he got diverted to the "alluring" subjects. Later he did say that plans for an ODT "dont-travel-unless-necessary" drive were shaping up. This campaign, it is understood, will enlist the aid of railroads and bus lines in an effort to educate the public against unnecessary travel.

The ODT director was "not prepared to discuss" the current investigation of rate bureaus being conducted by the Anti-Trust Division of the Department of Justice. He made that reply in response to a question which asked if the probe should be suspended for the duration in view of the Congress' recent action extending the statute of limitations with respect to anti-trust proceedings.

Appropriation Bill Signed

President Roosevelt has signed H. R. 7672, the supplemental national defense appropriation bill carrying $5,200,000 for the Office of Defense Transportation which will be in addition to the $7,216,515 ODT has already received for the current fiscal year ending June 30, 1943. As noted in last week's issue, page 668, Congressional action on the measure was completed on October 22 when the Senate adopted the conference report which had been approved by the House on the previous day.

Castle Promoted by ODT

O. C. Castle, who has been assistant director of the Office of Defense Transportation's Division of Railway Transport, has been promoted to associate director of the Division in charge of freight operations. Mr. Castle came to ODT last March from the Southern Pacific where he was formerly superintendent of transportation.

Another recent appointment in Division is that of Joseph B. Hattendorf, who becomes deputy director. He has been chairman of the Southern Ports Freight Committee at Chicago, and was formerly assistant freight traffic manager of the I. C.

I. C. C. Service Order 91

Because recent flood conditions in the Maryland-Virginia-West Virginia area have interrupted traffic movements and caused an accumulation of cars loaded with coal on the Virginian, the Interstate Commerce Commission on October 23 issued Service Order No. 91, directing that road to divert coal routed via the Cape Charles, Va., car ferry of the Pennsylvania to South Amboy, N. J. Cars at Roanoke, Va., at the time the order was issued, or cars subsequently received at that point, routed via Cape Charles, are to be routed via the Southern and Potomac Yards, Va., instead, while the order remains effective, but rates via Cape Charles shall apply.

Regular Car Part Sales Not on No-Profit Basis

To clarify misunderstandings that may exist as to what sales by car builders are subject to Maximum Price Regulation No. 174, the Office of Price Administration has issued Amendment 1 to that regulation, effective November 2, which clearly excludes from its coverage sales by car builders to railroads of partially or wholly fabricated parts usually produced and sold in such form for use in maintaining and repairing cars.

The regulation was designed to establish such maximum prices that no profit would be realized by a car builder on transfers to other builders of surplus parts for the purpose of equalizing inventories, and was not intended, the OPA points out, to establish price provisions applying to the car builders' regular business of supplying parts to railroads. The latter are covered by Maximum Price Regulation No. 136 (Machines and Parts and Machinery Services).

Would Close Some Supply Factories

Concentration, to squeeze out many concerns, is under study by WPB

Most of the industries producing consumers' durable goods, including some manufacturers of railway materials, are being studied for possibilities of concentrating production, according to Joseph L. Weiner, Deputy Director, Office of Civilian Supply of the War Production Board, in an address before the Chicago Association of Commerce on October 21.

The decision on July 23, approving the principle of "concentration," he said, was in effect a decision to prescribe where necessary standard articles should be produced and empowers the government to close plants, in part or whole, or to convert them to other forms of production. This concentration, he said, is justified principally by the fact that under the conditions of war only a small percentage of the capacity of some plants can be utilized in the usual way. The program, he added, will take us far away from some of the things we valued in peacetime. The fruits of past enterprise are threatened and some will be lost. We are departing from the spirit of the anti-trust laws, and must keep in mind the possibility that monopolies will be fostered; but, he added, the program is essential to the development of full war power.

The first duty of the Committee on Concentration, he explained, is to survey the economy and select the industries and trades in which concentration might aid the war effort directly, or insure the production of civilian goods in quantities without obstructing the war effort. If the committee decides to concentrate the production in any industry, the appropriate industry branch of WPB is directed to prepare a plan for the committee's consideration. The views of industry and labor are obtained, but he emphasized that the government carries the responsibility for the final decision. Industries in which concentration of production is being considered are chiefly those whose operations are, or will be, substantially below capacity, but some of whose products are essential in wartime.

The demands of war, he said, have become clearer and more insistent. We can now determine, with some degree of reliability, minimum essential requirements, particularly in the metal working industries; and we know that the exigency of the war will not permit production of more than the essential minimum civilian requirements in these industries. We know that production to meet those civilian requirements, if spread over all the plants formerly engaged in producing the article, would in most industries compel operations substantially below the break-even point under present price schedules. We also know that the success of the various firms engaging in munitions production will vary. It is wasteful to permit plants to work a

small part of the time or to fail without order or plan. Working capital is eaten up by many business concerns in vain attempts to ride out the storm. If they hang on in the hope that conditions will improve, plants, labor and management are used uneconomically. The high costs of operation under these conditions press upon price ceilings. Conditions of production may become so unfavorable as to imperil supplies of necessary goods. Certain regions have developed acute labor shortages, while others have a substantial surplus of labor; and increasing difficulties with transportation and electric power have arisen.

Car Scarcity Leads to Denial of Fourth Section Relief

Division 2 of the Interstate Commerce Commission, ruling in Fourth Section Application 18497, in which railroads participating in all-rail movement of fine bituminous coal from mines in Illinois, Indiana, and western Kentucky to La Crosse, Wis., and Winona and Red Wing, Minn., sought authority to establish rates to meet rail-barge competition without observing the long-and-short-haul provisions of the Interstate Commerce Act, has denied the application on the ground that the shortage of open top cars in the war emergency, and the probable increased need for such equipment in the near future, does not justify relief designed to encourage increased use of this equipment.

This finding, the decision points out, agrees with the action taken in a recent similar case, Fourth Section Application 19323, *Bituminous Coal to Dubuque, Iowa,* and no opinion is expressed as to whether or not relief would be justified under normal conditions in connection with rates higher than those proposed in the application, which are substantially the same as competitive rail-barge rates.

I. C. C. Applies Permit System to Coal Through Ports

By its Service Order No. 92, effective November 1, the Interstate Commerce Commission, Division 3, has established a permit system to control rail shipments of coal for transshipment by vessels at ports on Lake Ontario, Lake Erie, and Lake Michigan, and at New York, Philadelphia, Pa., Baltimore, Md., and Hampton Roads, Va.

This action is taken, the order indicates, "to prevent delay to railroad equipment and to expedite the movement and prompt handling of cars." W. J. McGarry, manager of the Ore & Coal Exchange, Cleveland, Ohio, is designated as agent of the commission with authority to issue permits for coal movements to lake ports for transshipment, and he is directed to exercise this authority "in such manner as to prevent the accumulation of cars of coal at the lake ports by any transshipper in excess of the ability of such transshipper to provide vessel capacity for the prompt dumping of coal." He is also directed to promote the voluntary consolidation of various grades and consignment designations of coal. Permits may be issued by him in blanket form or otherwise.

The agent designated to control the movement of coal for transshipment by vessels at ports in New York, New Jersey, Delaware, Pennsylvania and Maryland is W. R. Godber, joint manager of the Anthracite Tidewater Emergency Bureau and Northern Tidewater Bituminous Emergency Committee, 143 Liberty Street, New York. In addition to regulating shipment of coal to piers in such manner as to prevent accumulations of loaded cars at such points, he is also directed to advise the commission as to the maximum number of cars any transshipper may have on hand or in transit. If necessary, this agent may bring about embargoes of transshippers, piers, or ports, to accomplish the purposes of the order.

Similar authority is vested in E. D. Enney, bureau manager of the Hampton Roads Coal Emergency Committee, Norfolk, Va., with respect to coal for transshipment by vessel at Hampton Roads ports, and also in connection with coal moved by the Virginian to Little Creek, Va., for further movement by car floats to Cape Charles.

East Coast Oil Shipments Again Show Increase

Tank car shipments of oil to East Coast destinations took a sharp turn upward during the week ending October 17, following a three weeks' decline, Petroleum Coordinator Ickes has announced. A daily average of 838,163 barrels was reported for the week, an increase of 71,753 barrels a day over the previous week.

Large shipments of oil from the Middle West accounted for much of the increase, it was stated, but these shipments are expected to fluctuate widely with changes in heating oil requirements in that territory, which depend in turn on unpredictable weather conditions. "It should be noted," the announcement continues, "that the figures for tank car shipments for the week ended October 17 do not reflect the serious delays encountered during the past several days as a result of flood conditions in eastern terminal areas. One main railroad yard, for example, was under eight feet of water for a period of several days, causing serious disruption to the orderly flow of tank car trains and traffic congestion on necessary detour routes. These difficulties will be reflected in figures for the current seven-day period."

In making the average reported for the week ending October 17, 39 oil companies loaded 27,675 cars, which is nearly 40 per cent of the 70,576 tank cars at present engaged in the East Coast petroleum service.

In his role as solid fuels coordinator, Mr. Ickes announced that for the same week all-rail shipments of coal into New England totaled 6,307 carloads, or about 346,885 tons, an increase of 479 carloads, or 26,345 tons, over the previous week.

Mr. Ickes announced on October 28 that the oil pipe line now under construction from the East Texas oil fields to Norris City, Ill., will be extended to the East Coast to serve refineries in the New York-Philadelphia area. This line, the announcement states, "can not be counted on to provide unrestricted supplies of petroleum products for general civilian consumption. Its primary function, first, last, and always, must be to insure adequate petroleum supplies for our armed forces." Chairman Donald M. Nelson of the War Production Board has approved allocation of 224,000 tons of steel for the 857-mile extension, which will have a capacity of 300,000 barrels daily. From Norris City the line will extend across Indiana and Ohio to Phoenixville, Pa., whence branch lines will be laid to the Philadelphia and New York areas.

Byrnes to Decide Wage Case Routine

(Continued from page 704)

Labor Act procedures. In framing his presentation to Director Byrnes he conferred with management and labor attorneys, and included in the presentation memoranda wherein the attorneys had set forth their views on the relationship between the OES executive order and the Western engineer-firemen case.

The thirty-day period for conferences on individual railroads on the demands of the 14 non-operating railway labor unions and the Hotel and Restaurant Employees International Alliance for a wage increase of 20 cents an hour, a minimum wage of 70 cents an hour and a closed shop ended on October 26, with no railroad agreeing to the demands. A few conferences continued beyond that date by mutual agreement but by the end of the week all conferences had been completed and the demands turned down.

Under the Railway Labor Act, the next step is mediation and if that fails, arbitration, providing both parties agree, or in the absence of arbitration or if it fails to bring about an adjustment, the appointment of an emergency board. When mediation failed in the wage case last year, the unions threatened to strike and an emergency board was appointed by the President. The railroads then acquiesced to the unions' request that the matter be handled on a national basis, and appointed Regional Carriers' Conference Committees and a Joint Carriers' Conference Committee which handled the case for all railroads.

Whether the procedure of the present case will follow that of the last wage case depends upon the interpretations of recent Presidential orders. It is probable that labor executives and carriers' conference committees will be formed to handle the present case on a national basis.

On October 27, Director Byrnes issued a general salary regulation order which was countersigned by President Roosevelt. Among other things it clarified the administrative responsibilities of WLB and the Treasury in controlling wages and salaries; and fixed January 1, 1943, as the effective date of the $25,000-a-year ceiling on salaries after payment of taxes and allowances for life insurance premiums and fixed obligations in force October 3, and past income taxes due. Such allowances, Mr. Byrnes said, "will be permitted only where the recipient of the salary has no other source of income which can be utilized for these purposes and only where the recipient can show that he is unable to

meet these payments without disposing of assets at a substantial loss, involving undue hardship." If a company pays a salary in excess of the regulations "the entire salary paid, and not simply the amount in excess of $25,000, will be disregarded for tax purposes."

Removing what previous announcements had indicated would be overlapping responsibility with respect to salaries between $3,000 and $5,000, the regulation gives WLB control over wages and salaries "not in excess of $5,000 where the employee is represented by a duly recognized or certified labor organization or where the employee is not employed in a bona fide executive, administrative or professional capacity." All other salaries come under the jurisdiction of the Treasury Department.

Materials and Prices

Following is a digest of orders and notices of interest to railroads, issued by the War Production Board and the Office of Price Administration since October 16.

Bridge material—Revised lists of materials permissible in construction of highways, bridges and culverts were issued by the Conservation Division of WPB on October 5. The list shows items of construction in which currently critical materials were usually used; the critical material involved; and suggested substitutions. The list of substitutions and suggested alternate designs is intended as a guide and does not preclude, nor is it intended to discourage the use of other substitutions providing no critical materials are employed. Any construction or maintenance work must comply with the Directive for War-Time Construction, dated May 20, 1942, issued jointly by the War and Navy Departments and WPB. When designs call for critical materials, applications for preference rating should be made only when the work is essential to the national defense or to the health and safety of the civilian population; and for critical materials which are indispensable and for which non-critical materials cannot be substituted. Materials not included in the lists and not subject to allocation or priority control may be used without restriction or limitation provided, however, that there is no violation of the provisions of Priorities Regulation No. 1.

Buildings—Form PD-200B must be used after October 26 for all applications for amendments to construction projects authorized by a preference rating order of the P-19 series, according to an announcement on October 20. It should be used for requests for a higher rating and for items not previously authorized or for increases in quantities previously authorized. When a higher rating is requested, the applicant must list the items required and describe the efforts made to obtain these items with the authorized rating. After October 26, requests for project amendments will not be accepted on PD-1A forms or by letter, as at present. Letters, however, will continue to be accepted to alter delivery dates or for extensions of expiration dates as authorized on the original application.

Lumber—Amendment No. 3 to Conservation Order M-208 covering softwood lumber, issued October 20, tightens restrictions on the use of the higher stress grades of softwood lumber by raising the minimum rating required for Class 2 orders from AA-5 to AA-4. The order, as originally issued, limits the use of various grades of softwood lumber by dividing purchase orders into four classes, depending on the level of preference ratings. The grades of lumber which may be used to fill Class 1 orders require preference ratings of AA-2 or higher. The amendment limits the grades of lumber used to fill Class 2 orders to preference ratings of AA-4 or higher. At the same time, the top rating for Class 3 orders becomes AA-5 instead of A-1-a. Under Amendment No. 2 to the order, issued October 5, lumber users are required to apply to their purchases any rating which may have been assigned to them as a project rating on a PD-1A application under the Production Requirements Plan or otherwise. M-208, as amended, assigns ratings for various uses of lumber only in cases where no other rating has been assigned. Amendment No. 4, announced October 20, defines a softwood lumber producer as any plant which processes, by sawing, edging, planing or other comparable method, 25 per cent or more of the total volume of logs and lumber purchased or received and which sells as lumber the product of such processing. Buyers on Class 2 orders, as defined in M-208, may purchase Southern pine, Douglas fir and Western larch which meet a specification of 1400 to 1600 fiber stress. It is these grades which will be conserved by the amendment requiring a higher minimum preference rating for Class 2 orders.

Requisitions—Manufacturers working under the Production Requirements Plan who have urgent need of material over and above the amounts authorized for fourth-quarter use may apply for additional quantities on Form PD-25F, but are warned that only applications covering material necessary to the war effort or for essential civilian uses can be considered, according to instructions announced October 20. The instructions for filling out the application forms for supplemental authorizations direct that a separate PD-25F be filed for each class of product covered by the authorization on PD-25A. Applicants must submit a letter explaining in detail the purpose for which additional material is being requested, indicating whether it is for use or receipt—as indicated on the PD-25A authorization—and whether an appeal is being made for permission to divert quantities already authorized for use in one product to the production of another.

Shovels—Under Amendment No. 3 to Schedule I of Limitation Order L-157, issued October 20, shovel manufacturers who had in their possession before August 10, 1942, inventories of raw and partly processed steel in shapes and sizes not usable under the order are permitted to continue fabrication of the material. In the original order further processing of steel for shovels, spades and scoops in shapes and sizes not listed in Schedule I was prohibited, regardless of inventory. The amendment does not allow manufacturers any new steel.

Lumber—L-218 restricts sales of Douglas fir lumber from the western side of the Cascade mountains to the central procuring agency of the corps of engineers or through the WPB lumber and lumber products branch with the exception of No. 3 board, No. 3 dimension or No. 3 timbers and grades of factory and shop lumber which remain subject to the softwood lumber order.

Prices

Fuel oil—Details of the methods by which fuel oil will be allocated in 30 states to assure adequate supplies for essential heating, industrial and other purposes were issued October 19. Petroleum products covered by the order include standard grades of residual fuel oil, commonly used for industrial purposes; distillate oil, the type normally used for heating; Diesel oil, kerosene, range oil and gas oil. The order provides for the registration of all dealers and suppliers in the rationed area. Suppliers who do not maintain storage facilities in the limitation area but who deliver fuel oil into the rationed area in some specified instances also must register. Fuel oil for equipment used only for furnishing hot water as an integral part of a commercial, industrial, agricultural or extractive process or for purposes directly related to the public health or safety may be obtained on Form R-1102, for three-month periods. Such uses are not curtailed. Rations for commercial motor vehicles are to be issued on Form R-1103, and no ration may be obtained for the operation of commercial motor vehicles after the date when the operation of such vehicles without a Certificate of War Necessity is prohibited by General Order No. 21 of the Office of Defense Transportation. The amount of fuel oil necessary for operation of the vehicle will be issued up to December 31, 1942, but this ration will not be in excess of the amount of fuel oil used during the corresponding period of the preceding year, unless the applicant shows good cause for the increase in requirements. After December 31, 1942, the ration is limited to the amount approved in the Certificate of War Necessity.

Lumber—Duty and custom brokerage fees on imported Canadian lumber cannot be added, either directly or as transportation costs, to the maximum prices established for Northern softwood lumber, it was announced on October 23. Northern softwood lumber is priced under Maximum Price Regulation 222. The regulation establishes two basing points for pricing imported Canadian lumber—Spokane, Wash., and Baudette, Minn. Maximum prices are f.o.b. the applicable basing point. In the case of additions allowed for transportation, the permissible charges are computed on the basis of the transportation cost from the applicable basing point to the point of destination. The seller must absorb the duty and custom brokerage fees.

* * *

NOTHING MATTERS NOW BUT "VICTORY"
BUY YOUR VICTORY BONDS THROUGH C.N.R.
PLUS RIEN N'IMPORTE SAUF LA "VICTOIRE"
ACHETEZ VOS BONS DE VICTOIRE PAR ENTREMISE DU C.N.R.

C.N.R. Photo

Railway Bond-Selling in Two Languages

A group of potential purchasers of Dominion war securities on line to secure information at one of the booths set up for that purpose at the C.N.R.'s Point St. Charles Shops (Montreal). Many C.N.R. employees are French-speaking, as the sign suggests.

Between Chicago and the Twin Cities, between Chicago and Omaha, Nebr., and between Chicago and Kansas City, Mo., the schedules will be lengthened three to four hours. Chicago-Denver runs will be lengthened seven hours.

Freight Car Loadings

Loadings or revenue freight for the week ended October 24 totaled 903,246 cars, the Association of American Railroads announced on October 29. This was an increase of 2,479 cars, or 0.3 per cent, over the previous week, a decrease of 10,359 cars, or 1.1 per cent, below the corresponding week last year, and an increase of 65,589 cars, or 7.8 per cent, above the comparable 1940 week.

As reported in last week's issue, loadings of revenue freight for the week ended October 17 totaled 900,767 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, October 17			
Districts	1942	1941	1940
Eastern	162,592	185,621	161,564
Allegheny	183,477	196,086	165,627
Pocahontas	54,724	59,363	46,416
Southern	126,069	129,441	112,073
Northwestern ..	148,445	146,240	139,565
Central Western	145,483	144,479	131,288
Southwestern ..	79,977	61,654	57,376
Total Western Districts	373,905	352,373	328,229
Total All Roads	900,767	922,884	813,909
Commodities			
Grain and grain products	50,461	37,564	36,742
Live stock	24,477	22,805	22,359
Coal	164,213	167,617	120,689
Coke	14,201	13,038	11,699
Forest products.	48,470	46,317	41,412
Ore	75,807	68,808	69,728
Merchandise l.c.l.	90,962	159,285	158,789
Miscellaneous ..	432,176	407,450	352,491
October 17	900,767	922,884	813,909
October 10	909,957	903,877	811,906
October 3	907,607	917,896	806,004
September 26 ..	897,714	919,794	822,434
September 19 ..	903,099	907,969	813,329
Cumulative Total, 42 weeks ...	34,954,510	34,012,406	29,021,859

In Canada.—Carloadings for the week ended October 17 totaled 69,099, as compared with 73,952 for the previous week (the decline being attributed to the October 12 holiday), according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
October 17, 1942	69,099	35,035
October 10, 1942	73,952	36,113
October 3, 1942	69,987	36,829
October 18, 1941	65,406	32,271
Cumulative Totals for Canada:		
October 17, 1942	2,703,228	1,418,847
October 18, 1941	2,533,562	1,239,326
October 19, 1940	2,232,311	1,027,072

Santa Fe Scrap

The Atchison, Topeka & Santa Fe sold $2,853,025 of scrap during the first eight months of the year, consisting of $795,016 of scrap brass, $428,774 of scrap wheels, $508,918 of relayer rail and $1,120,317 of miscellaneous scrap. This was 21 per cent more scrap brass than in eight months of 1941, 15 per cent more scrap wheels, 38 per cent more relayer rail, 37 per cent less miscellaneous scrap and a net reduction of 10 per cent in total sales. The totals reflected 67 per cent more brass than in eight months of 1940, 46 per cent more scrap wheels, 114 per cent more relayer rail, 47 per cent less miscellaneous scrap and a net reduction of 9 per cent in total sales.

Barrett Warns Unfettered Rail Systems Needed

Attorney General George F. Barrett of Illinois, in an address at the twenty-second annual banquet of the Chicago Railway Special Agents and Police Association at Chicago on October 22, warned the federal government to keep its hands off of the railroads to help win the war. "The railroads must be free from extravagance, red tape, and every semblance of inefficiency—in short, free from every fault which would result from government operation," he asserted.

"With the future of America at stake, the trains of this nation must be permitted to operate under their own steam, not under the steam of politicians in Washington. The railroads stand out like a giant beacon to 130 million Americans who need sure and fast moving wheels in their all-out drive against the greatest armed might in history. In the World War under government operation, the railroads not only lost a billion and a half dollars but saw their service wrecked."

Urges Efficient Use of Cars in Scrap Collection Drive

Moving to prevent detention of gondola cars used for handling scrap collected in the current drive, Chairman W. C. Kendall of the Car Service Division has called upon transportation officers to see that local agents refuse to place cars until there has accumulated a sufficient supply of scrap to permit prompt loading. Avoidable detentions might result if the subject is not given close supervision, he said.

In the latter connection, the Car Service Division chairman referred to situations where "requests have been made for cars to be placed on team tracks or sidings for the reception of odd lots of scrap being collected by wagon or truck." Also, he mentioned car supply difficulties which have arisen because shippers have demanded large cars in order to get lower rates applying on higher minimums. This situation has been called to the attention of the Interstate Commerce Commission, Mr. Kendall said, adding that "we have been advised that the incurring of increased operating expense in order to supply cars of certain specified length or size is seriously objectionable and that there is no duty upon the carrier to furnish any particular size of car."

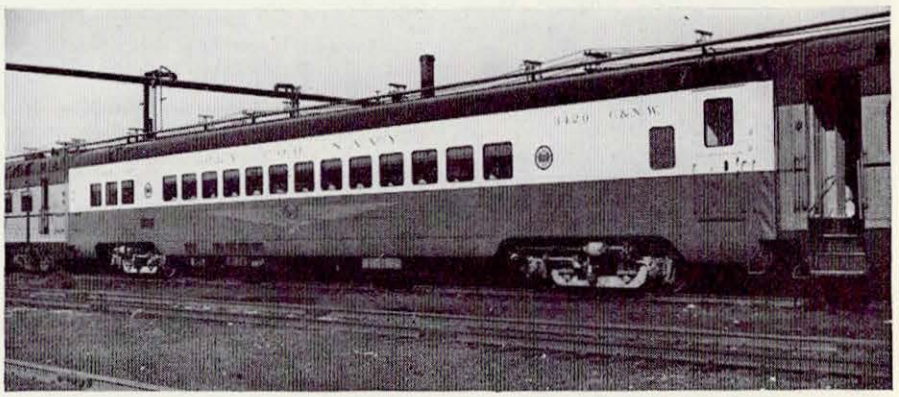
Lackawanna Officers Hold Forum at Scranton, Pa.

Executive heads of departments of the Delaware, Lackawanna & Western, their staff officers, junior officers and those in charge of nearby off-line traffic offices, held a staff conference in Scranton, Pa., on October 27 under the direction of William White, president of the road.

Means of providing better service to the public were discussed and suggestions regarding economical operation and the duties and responsibilities of railroad employees in co-operation with the government and local community activities associated with the war effort were also considered. Junior officers of the road and others who come in direct contact with the public, as well as supervisory officers in charge of operations and other functional matters, were invited to discuss with the management their experiences and recommendations. This was the second such conference to be held by the road, the forum having been inaugurated by President White last year.

North Western Dedicates Car to Naval Aviation

The first railway car in the United States to be dedicated to Naval aviation was christened on October 15 at the Chicago and North Western station by a member of the Waves, woman's unit in the Navy, who smashed a bottle containing water from all the Great Lakes against its side. The car is a streamlined coach of the Chicago and North Western's "400" fleet. The car has been repainted red, white and blue with huge letters on its sides reading "Fly for Navy." It is the first of two such cars to be repainted. The other, which will have "Fly for Army" messages, will be ready in about a week. The roof of the car is red, the window section of the side is white and the lower portion of the side is blue. The wings on this blue background are gold, the insignia on the white background are yellow en-



One of the Streamlined Coaches of the Chicago & North Western Goes on a Recruiting Campaign

meet these payments without disposing of assets at a substantial loss, involving undue hardship." If a company pays a salary in excess of the regulations "the entire salary paid, and not simply the amount in excess of $25,000, will be disregarded for tax purposes."

Removing what previous announcements had indicated would be overlapping responsibility with respect to salaries between $3,000 and $5,000, the regulation gives WLB control over wages and salaries "not in excess of $5,000 where the employee is represented by a duly recognized or certified labor organization or where the employee is not employed in a bona fide executive, administrative or professional capacity." All other salaries come under the jurisdiction of the Treasury Department.

Materials and Prices

Following is a digest of orders and notices of interest to railroads, issued by the War Production Board and the Office of Price Administration since October 16.

Bridge material—Revised lists of materials permissible in construction of highways, bridges and culverts were issued by the Conservation Division of WPB on October 5. The list shows items of construction in which currently critical materials were usually used; the critical material involved; and suggested substitutions. The list of substitutions and suggested alternate designs is intended as a guide and does not preclude, nor is it intended to discourage the use of other substitutions providing no critical materials are employed. Any construction or maintenance work must comply with the Directive for War-Time Construction, dated May 20, 1942, issued jointly by the War and Navy Departments and WPB. When designs call for critical materials, applications for preference rating should be made only when the work is essential to the national defense or to the health and safety of the civilian population; and for critical materials which are indispensable and for which non-critical materials cannot be substituted. Materials not included in the lists and not subject to allocation or priority control may be used without restriction or limitation provided, however, that there is no violation of the provisions of Priorities Regulation No. 1.

Buildings—Form PD-200B must be used after October 26 for all applications for amendments to construction projects authorized by a preference rating order of the P-19 series, according to an announcement on October 20. It should be used for requests for a higher rating and for items not previously authorized or for increases in quantities previously authorized. When a higher rating is requested, the applicant must list the items required and describe the efforts made to obtain these items with the authorized rating. After October 26, requests for project amendments will not be accepted on PD-1A forms or by letter, as at present. Letters, however, will continue to be accepted to alter delivery dates or for extensions of expiration dates as authorized on the original application.

Lumber—Amendment No. 3 to Conservation Order M-208 covering softwood lumber, issued October 20, tightens restrictions on the use of the higher stress grades of softwood lumber by raising the minimum rating required for Class 2 orders from AA-5 to AA-4. The order, as originally issued, limits the use of various grades of softwood lumber by dividing purchase orders into four classes, depending on the level of preference ratings. The grades of lumber which may be used to fill Class 1 orders require preference ratings of AA-2 or higher. The amendment limits the grades of lumber used to fill Class 2 orders to preference ratings of AA-4 or higher. At the same time, the top rating for Class 3 orders becomes AA-5 instead of A-1-a. Under Amendment No. 2 to the order, issued October 5, lumber users are required to apply to their purchases any rating which may have been assigned to them as a project rating on a PD-1A application under the Production Requirements Plan or otherwise. M-208, as amended, assigns ratings for various uses of lumber only in cases where no other rating has been assigned. Amendment No. 4, announced October 20, defines a softwood lumber producer as any plant which processes, by sawing, edging, planing or other comparable method, 25 per cent or more of the total volume of logs and lumber purchased or received and which sells as lumber the product of such processing. Buyers on Class 2 orders, as defined in M-208, may purchase Southern pine, Douglas fir and Western larch which meet a specification of 1400 to 1600 fiber stress. It is these grades which will be conserved by the amendment requiring a higher minimum preference rating for Class 2 orders.

Requisitions—Manufacturers working under the Production Requirements Plan who have urgent need of material over and above the amounts authorized for fourth-quarter use may apply for additional quantities on Form PD-25F, but are warned that only applications covering material necessary to the war effort or for essential civilian uses can be considered, according to instructions announced October 20. The instructions for filling out the application forms for supplemental authorizations direct that a separate PD-25F be filed for each class of product covered by the authorization on PD-25A. Applicants must submit a letter explaining in detail the purpose for which additional material is being requested, indicating whether it is for use or receipt—as indicated on the PD-25A authorization—and whether an appeal is being made for permission to divert quantities already authorized for use in one product to the production of another.

Shovels—Under Amendment No. 3 to Schedule I of Limitation Order L-157, issued October 20, shovel manufacturers who had in their possession before August 10, 1942, inventories of raw and partly processed steel in shapes and sizes not usable under the order are permitted to continue fabrication of the material. In the original order further processing of steel for shovels, spades and scoops in shapes and sizes not listed in Schedule I was prohibited, regardless of inventory. The amendment does not allow manufacturers any new steel.

Lumber—L-218 restricts sales of Douglas fir lumber from the western side of the Cascade mountains to the central procuring agency of the corps of engineers or through the WPB lumber and lumber products branch with the exception of No. 3 board, No. 3 dimension or No. 3 timbers and grades of factory and shop lumber which remain subject to the softwood lumber order.

Prices

Fuel oil—Details of the methods by which fuel oil will be allocated in 30 states to assure adequate supplies for essential heating, industrial and other purposes were issued October 19. Petroleum products covered by the order include standard grades of residual fuel oil, commonly used for industrial purposes; distillate oil, the type normally used for heating; Diesel oil, kerosene, range oil and gas oil. The order provides for the registration of all dealers and suppliers in the rationed area. Suppliers who do not maintain storage facilities in the limitation area but who deliver fuel oil into the rationed area in some specified instances also must register. Fuel oil for equipment used only for furnishing hot water as an integral part of a commercial, industrial, agricultural or extractive process or for purposes directly related to the public health or safety may be obtained on Form R-1102, for three-month periods. Such uses are not curtailed. Rations for commercial motor vehicles are to be issued on Form R-1103, and no ration may be obtained for the operation of commercial motor vehicles after the date when the operation of such vehicles without a Certificate of War Necessity is prohibited by General Order No. 21 of the Office of Defense Transportation. The amount of fuel oil necessary for operation of the vehicle will be issued up to December 31, 1942, but this ration will not be in excess of the amount of fuel oil used during the corresponding period of the preceding year, unless the applicant shows good cause for the increase in requirements. After December 31, 1942, the ration is limited to the amount approved in the Certificate of War Necessity.

Lumber—Duty and custom brokerage fees on imported Canadian lumber cannot be added, either directly or as transportation costs, to the maximum prices established for Northern softwood lumber, it was announced on October 23. Northern softwood lumber is priced under Maximum Price Regulation 222. The regulation establishes two basing points for pricing imported Canadian lumber—Spokane, Wash., and Baudette, Minn. Maximum prices are f.o.b. the applicable basing point. In the case of additions allowed for transportation, the permissible charges are computed on the basis of the transportation cost from the applicable basing point to the point of destination. The seller must absorb the duty and custom brokerage fees.

* * *

NOTHING MATTERS NOW BUT "VICTORY"
BUY YOUR VICTORY BONDS THROUGH C.N.R.
PLUS RIEN N'IMPORTE SAUF LA "VICTOIRE"
ACHETEZ VOS BONS DE VICTOIRE PAR ENTREMISE DU C.N.R.

C.N.R. Photo

Railway Bond-Selling in Two Languages

A group of potential purchasers of Dominion war securities on line to secure information at one of the booths set up for that purpose at the C.N.R.'s Point St. Charles Shops (Montreal). Many C.N.R. employees are French-speaking, as the sign suggests.

GENERAL NEWS

Waives Trammel on Truck Operation

Mo. P. trucks not limited to freight which gets part of its haul on rails

"Public convenience and necessity require the increased economy, frequency, and flexibility resulting from coordinated service," and "this is true regardless of whether there is a prior or subsequent movement by rail," the Interstate Commerce Commission asserted in a recent decision which granted Missouri Pacific applications for certificates covering two truck routes and rejected protestant contentions that the so-called prior-or-subsequent-haul condition should be imposed. The decision by Division 5 is in No. MC-44609 (Sub-No. 9), and the majority report represents the view of Commissioners Mahaffie and Rogers; Commissioner Patterson dissented.

The routes involved are between McClure, Ill., and Cape Girardeau, Mo., and between Cairo, Ill., and Charleston, Mo. Aside from becoming connecting links in the M. P.'s existing network of truck routes, the new operations will permit an improvement in the service now rendered over a circuitous rail route.

The prior-or-subsequent-haul condition would have limited shipments handled by the trucks to those moving on through bills of lading which had a prior or subsequent haul by rail. "Manifestly the imposition of such a condition here," the commission said, "would seriously limit the benefits in economy and efficiency which applicant, by coordinated service, seeks to attain. . . . Applicant's rail service is uneconomical and inefficient and it seeks not to enter a wholly new field of service but to substitute a more economical and efficient means of service. One competitive carrier has no vested right in the continuation, by another, of an inefficient method of operation, and we believe it to be neither the policy of Congress nor the proper function of this commission to retard any form of progress in transportation which will serve the public interest."

The foregoing, the report pointed out, is in line with the commission's decision in *Kansas City S. Transport Co., Inc., Com. Car. Application,* 28 M. C. C. 5, which is again cited when the report later rejects another protestant contention that the M. P. should be required to effect its coordinated service through arrangements with independent truck lines already operating on the routes involved. "The record here," the report said, "affords no basis for a different conclusion" than the Kansas City Southern case rule to the effect that a railroad applicant "should not be required to utilize the services of existing motor carriers."

Dissenter Patterson objected because "both operations would tend to take traffic from existing motor carriers whose services are adequate." In his opinion the Cairo-Charleston extension "would not be a coordinated rail-motor service but a direct motor service to supplant an indirect rail service"; while he found "no substantial showing" that the Cape Girardeau-McClure route "is required by public convenience and necessity."

I. C. C. Cancels Service Order on Floods

The Interstate Commerce Commission on October 22 issued Service Order No. 90-A, vacating Service Order 90 which had been issued October 16 to direct the Baltimore & Ohio to disregard routings and forward by the most available open routes cars which had been routed via lines affected by floods.

Two More Agents to Handle Soybean Movement

Two additional permit agents to handle the soybean movement have been designated by the Interstate Commerce Commission in an October 27 amendment to Service Order No. 80 which was originally issued last July to set up the permit system for handling the 1942 grain crop. The new agents will control movements at the Memphis, Tenn., and Little Rock, Ark., markets.

Would Keep Small Shipper Claims in State Courts

Representative Kefauver, Democrat of Tennessee, has introduced H.R. 7724 which would prohibit the transfer from state to federal courts of suits arising under sections 20 (11) and (12), 219 or 413 of the Interstate Commerce Act when the amount involved does not exceed $3,000, exclusive of interest and costs. The sections specified relate among other things to the liability of carriers for loss or damage.

A. E. Heiss Retires

A. E. Heiss, chief of the Traffic World's Washington News Bureau, will retire on November 1 after more than a quarter-century of service as a Washington correspondent for that magazine. In his work of covering the Interstate Commerce Commission, Mr. Heiss has become widely known among practitioners, railroad attorneys and other railroad men participating in proceedings before the commission. A native of Ohio, he has been in Washington since 1895 when he came as a newspaper correspondent.

Co-ordinated Adv. Campaign in East

Individual roads have program giving intensive coverage without overlapping

A co-ordinated newspaper advertising campaign participated in by twelve Eastern railroads, designed to make known to the public the important part the carriers are playing in the war effort, was initiated recently, as announced briefly in the *Railway Age* of October 24.

The idea was the outgrowth of the decision at a meeting held last May under the auspices of the Association of American Railroads, to the effect that the roads would discontinue advertising their so-called "competitive" services, and concentrate more upon the important job the roads are doing in the transporting of war material and troops.

C. R. Dugan, public relations manager of the New York Central, evolved a plan whereby the wartime story of the railroads might be told by the individual roads in their newspaper advertising without duplication or overlapping. Representatives of interested roads in Eastern territory met and decided upon the subjects to be covered in the campaign and the schedule of insertions the participants would observe. Preparation of copy for the ads, however, has been left entirely up to the individual roads and their advertising agencies. The 12 roads participating in the campaign include the Alton, Baltimore & Ohio, Boston & Maine, Chesapeake & Ohio, Delaware & Hudson, Delaware, Lackawanna & Western, Erie, Lehigh Valley, New York Central, Norfolk & Western, Pennsylvania and the Reading.

More than 800 newspapers, both daily and weekly, are on the schedules announced thus far by three of the roads. For example, the New York Central will use about 500, the Erie 100, and the Baltimore & Ohio 208. All communities entered by the twelve participating roads will be covered by the campaign. Except in New York, the campaign has been placed on a 12-week basis. Thus, while in New York ads will run as frequently as three times a week (on Monday, Wednesday and Friday), in other communities they may run only once a week or every other week.

The amount of space used for the ads will vary in different communities. The New York Central will use its largest copy, 1,440 lines, in New York and Chicago. The size will scale down to 1,000 lines in cities with a population over 100,000 (New York excepted), 640 lines in cities with a population of between 20,000

and 100,000, and 300 lines in smaller cities.

In New York, where 8 newspapers of wide circulation are being used, the six railroads serving the city have scheduled a total of 48 advertisements. To avoid conflict, the railroads and newspapers have been scheduled alphabetically. For example, "A" road, the Baltimore & Ohio, will use "A" newspaper (Herald-Tribune) on Monday; "B" road, the Delaware, Lackawanna & Western, will use "B" paper (Journal-American) on Wednesday. This will continue until each road has used one ad in each of the eight newspapers on the list. Readers of the different newspapers will thus see only one ad on a particular subject by any one railroad.

I. C. Ordered to Use Both Flagman and Baggageman

The Illinois Commerce Commission, on October 27, ordered the Illinois Central to discontinue the practice of using one man as a flagman—baggageman on certain runs and, as a safety measure to use two men, a flagman and a baggageman. The runs, all in Illinois, are between Chicago and East Dubuque, Ia.; Chicago and Madison, Wis.; Chicago and Cairo, Ill.; and East St. Louis, Ill. and Cairo.

McNear Asks for Umpire Named by Court of Appeals

George P. McNear, Jr., president of the Toledo, Peoria & Western, informed the National War Labor Board on October 27, that "under the circumstances" he cannot comply with the board's directive order of October 9, and suggested that the issue be submitted to investigation and decision by an arbiter to be appointed by the senior judge of the United States Circuit Court of Appeals in Chicago. Previous requests for a hearing were made by Mr. McNear on October 15 and 17.

Further Suspension of Minimum Motor Rate Orders

The Interstate Commerce Commission, Division 2, has further suspended for another year from November 2 until November 1, 1943, the effective date of its outstanding orders prescribing minimum motor carrier rates in four general proceedings. The proceedings are Ex Parte No. MC-20, Trunk Line Territory Motor Carrier Rates; Ex Parte No. MC-21, Central Territory Motor Carrier Rates; Ex Parte No. MC-22, New England Motor Carrier Rates; and Ex Parte No. MC-23, Midwestern Motor Carrier Rates.

September Locomotive Shipments

September shipments of railroad locomotives totaled 177 as compared with 147 (revised) in August and 79 in September, 1941, according to reports from builders to the Bureau of the Census of the Department of Commerce. Shipments in the first nine months of this year totaled 1,155 locomotives, including 475 steam, 11 electrics, 606 Diesel-electrics, and 63 of other types, as compared with a total of 683, including 118 steam, 15 electrics, 507 Diesel-electrics, and 43 of other types during the same nine months of 1941.

Unfilled orders reported by builders as of September 30, 1942, totaled 1,932 locomotives, including 1,065 steam, 50 electrics, 798 Diesel-electrics, and 19 of other types. Comparable figures for September 30, 1941, were: Total, 917; steam, 285; electrics, 51; Diesel-electrics, 548; others, 33.

Data furnished by the Car Service Division of the Association of American Railroads on locomotive building in railroad shops show that four locomotives—one steam and three electrics—were thus produced in September of this year, as compared with two (both steam) in September, 1941. During the first nine months of this year railroad shops built 58 locomotives (revised figures), of which 42 were steam and 16 electrics, as compared with 12 (ten steam and two electrics) in the same period last year. As of October 1, railroad shops had unfilled orders for 90 locomotives, including 76 steam and 14 electrics.

Negro Complaints to I. C. C.

Two separate complaints alleging that Negro passengers were refused service in dining cars on Southern and Atlantic Coast Line trains have been filed with the Interstate Commerce Commission. They seek orders requiring the railroads to discontinue such alleged discrimination.

The complaint against the Southern was filed by Elmer W. Henderson, a Negro field representative of the Committee on Fair Employment Practices, an agency of the War Manpower Commission; while that against the A. C. L. was filed by William L. Standard, a New York attorney, on behalf of 17 complaining "colored citizens."

Nineteen Killed When Bus Runs in Front of Train

Nineteen persons, including several school pupils, were killed on October 28, when a crowded Detroit Street Railways bus ran in front of a passenger train of the Grand Trunk Western at Caniff avenue. According to reports, the driver had stopped while a northbound freight train passed and although flashing light signals were still operating and the whistle of the locomotive of the passenger train was still sounding, proceeded across the tracks in front of the southbound passenger train. The front end of the bus cleared the tracks but the force of the impact at the middle of the bus cut it in two, demolishing the rear end.

Grade Crossing Accidents Peril War Effort

Delays in train service resulting from grade-crossing accidents can reach proportions that will seriously affect our ability to prosecute the war to a successful conclusion, according to Charles E. Hill, general safety agent of the New York Central, in an address before the Steam Railroad section of the National Safety Council at Chicago on October 27-29. "Collisions at grade crossings," Mr. Hill said, "average 4,000 a year and of these accidents 200 cause derailments." He recommended careful driving as a means of protecting the transportation of war materials.

Others addressing the meeting were Dr. Irving S. Cutter, medical director of the Chicago & North Western; H. J. Hoglund, assistant to the executive vice-president of the Chicago, Burlington & Quincy; E. J. League, inspector of the U. S. Bureau of Explosives, W. J. Flannigan, assistant superintendent of safety of the Northern Pacific; and H. A. Daake, supervisor of safety of the Erie.

East St. Louis Station Case Postponed

The Illinois Commerce Commission, on October 21, at the request of East St. Louis, Ill., has postponed indefinitely its hearing on the request of East St. Louis that the St. Louis Terminal Railroad Association be required to construct, maintain and operate a new union station in East St. Louis. Counsel for both the city and the Terminal joined in asking the commission to cancel a scheduled hearing on the city's application. Counsel for East St. Louis stated that the city requested the cancellation of the hearing to await a ruling by the Interstate Commerce Commission, which recently conducted a hearing at St. Louis, Mo., on the demand of St. Louis that the Terminal be compelled to eliminate its elevated tracks on the St. Louis river front.

Safety Section Issues December Poster

The safety poster and circular of the Committee on Education, Safety Section, A. A. R., for December, 1942, stress the importance of avoiding accidents ascribable to "man-failure," which is a leading cause of casualties, and plays right into the hands of the enemy. The enslavement of the workers in Nazis-occupied Europe is cited, with the warning that American workers must be fully awake to their responsibilities if they would avoid similar disaster. The circular takes the form of a pledge to be signed and returned to the Committee by the employee as evidence of his willingness to "Serve Safely for Victory" and to preserve the American way of living. The poster, entitled "—— Make Mine Liberty," follows the same general theme.

Chicago-Pacific Coast Freight Service to be Eighth Morning

Transcontinental railroads have decided to establish eighth morning delivery of freight in both directions between Chicago and the Pacific Coast. It is expected that lengthened schedules will be made effective on November 1. The action follows a meeting of the Western Association of Railway Executives and representatives of the Office of Defense Transportation at Chicago on October 5, at which lengthened freight and passenger schedules were discussed. This is the second adjustment of Chicago-Pacific Coast freight schedules within a year, the first having been made on November 20, 1941, when the westbound time was lengthened from sixth to seventh morning.

Exceptions to the longer schedules will be meat and livestock trains. St. Louis-Pacific coast freight service will be lengthened from sixth to seventh morning delivery and that between St. Louis, Mo., and the Pacific northwest to eighth morning.

Between Chicago and the Twin Cities, between Chicago and Omaha, Nebr., and between Chicago and Kansas City, Mo., the schedules will be lengthened three to four hours. Chicago-Denver runs will be lengthened seven hours.

Freight Car Loadings

Loadings or revenue freight for the week ended October 24 totaled 903,246 cars, the Association of American Railroads announced on October 29. This was an increase of 2,479 cars, or 0.3 per cent, over the previous week, a decrease of 10,359 cars, or 1.1 per cent, below the corresponding week last year, and an increase of 65,589 cars, or 7.8 per cent, above the comparable 1940 week.

As reported in last week's issue, loadings of revenue freight for the week ended October 17 totaled 900,767 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, October 17

Districts	1942	1941	1940
Eastern	162,592	185,621	161,564
Allegheny	183,477	196,086	165,627
Pocahontas	54,724	59,363	46,416
Southern	126,069	129,441	112,073
Northwestern ..	148,445	146,240	139,565
Central Western	145,483	144,479	131,288
Southwestern ..	79,977	61,654	57,376
Total Western Districts	373,905	352,373	328,229
Total All Roads	900,767	922,884	813,909
Commodities			
Grain and grain products	50,461	37,564	36,742
Live stock	24,477	22,805	22,359
Coal	164,213	167,617	120,689
Coke	14,201	13,038	11,699
Forest products.	48,470	46,317	41,412
Ore	75,807	68,808	69,728
Merchandise l.c.l.	90,962	159,285	158,789
Miscellaneous ..	432,176	407,450	352,491
October 17	900,767	922,884	813,909
October 10	909,957	903,877	811,906
October 3	907,607	917,896	806,004
September 26 ..	897,714	919,794	822,434
September 19 ..	903,099	907,969	813,329
Cumulative Total, 42 weeks ...	34,954,510	34,012,406	29,021,859

In Canada.—Carloadings for the week ended October 17 totaled 69,099, as compared with 73,952 for the previous week (the decline being attributed to the October 12 holiday), according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
October 17, 1942	69,099	35,035
October 10, 1942	73,952	36,113
October 3, 1942	69,987	36,829
October 18, 1941	65,406	32,271
Cumulative Totals for Canada:		
October 17, 1942	2,703,228	1,418,847
October 18, 1941	2,533,562	1,239,326
October 19, 1940	2,232,311	1,027,072

Santa Fe Scrap

The Atchison, Topeka & Santa Fe sold $2,853,025 of scrap during the first eight months of the year, consisting of $795,016 of scrap brass, $428,774 of scrap wheels, $508,918 of relayer rail and $1,120,317 of miscellaneous scrap. This was 21 per cent more scrap brass than in eight months of 1941, 15 per cent more scrap wheels, 38 per cent more relayer rail, 37 per cent less miscellaneous scrap and a net reduction of 10 per cent in total sales. The totals reflected 67 per cent more brass than in eight months of 1940, 46 per cent more scrap wheels, 114 per cent more relayer rail, 47 per cent less miscellaneous scrap and a net reduction of 9 per cent in total sales.

Barrett Warns Unfettered Rail Systems Needed

Attorney General George F. Barrett of Illinois, in an address at the twenty-second annual banquet of the Chicago Railway Special Agents and Police Association at Chicago on October 22, warned the federal government to keep its hands off of the railroads to help win the war. "The railroads must be free from extravagance, red tape, and every semblance of inefficiency—in short, free from every fault which would result from government operation," he asserted.

"With the future of America at stake, the trains of this nation must be permitted to operate under their own steam, not under the steam of politicians in Washington. The railroads stand out like a giant beacon to 130 million Americans who need sure and fast moving wheels in their all-out drive against the greatest armed might in history. In the World War under government operation, the railroads not only lost a billion and a half dollars but saw their service wrecked."

Urges Efficient Use of Cars in Scrap Collection Drive

Moving to prevent detention of gondola cars used for handling scrap collected in the current drive, Chairman W. C. Kendall of the Car Service Division has called upon transportation officers to see that local agents refuse to place cars until there has accumulated a sufficient supply of scrap to permit prompt loading. Avoidable detentions might result if the subject is not given close supervision, he said.

In the latter connection, the Car Service Division chairman referred to situations where "requests have been made for cars to be placed on team tracks or sidings for the reception of odd lots of scrap being collected by wagon or truck." Also, he mentioned car supply difficulties which have arisen because shippers have demanded large cars in order to get lower rates applying on higher minimums. This situation has been called to the attention of the Interstate Commerce Commission, Mr. Kendall said, adding that "we have been advised that the incurring of increased operating expense in order to supply cars of certain specified length or size is seriously objectionable and that there is no duty upon the carrier to furnish any particular size of car."

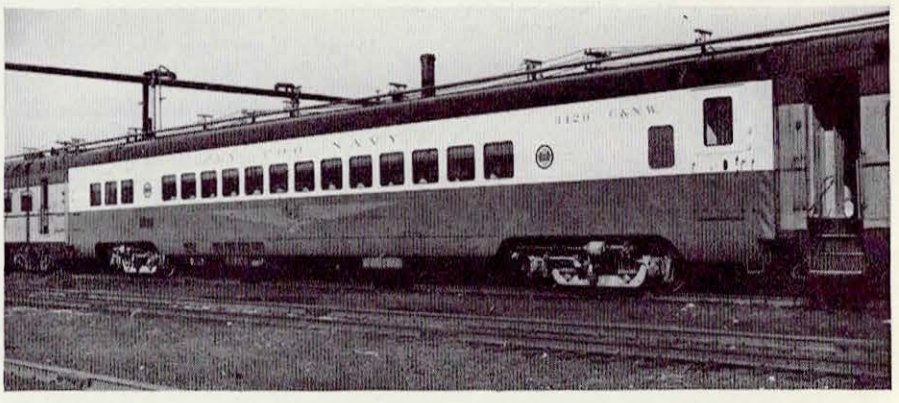
Lackawanna Officers Hold Forum at Scranton, Pa.

Executive heads of departments of the Delaware, Lackawanna & Western, their staff officers, junior officers and those in charge of nearby off-line traffic offices, held a staff conference in Scranton, Pa., on October 27 under the direction of William White, president of the road.

Means of providing better service to the public were discussed and suggestions regarding economical operation and the duties and responsibilities of railroad employees in co-operation with the government and local community activities associated with the war effort were also considered. Junior officers of the road and others who come in direct contact with the public, as well as supervisory officers in charge of operations and other functional matters, were invited to discuss with the management their experiences and recommendations. This was the second such conference to be held by the road, the forum having been inaugurated by President White last year.

North Western Dedicates Car to Naval Aviation

The first railway car in the United States to be dedicated to Naval aviation was christened on October 15 at the Chicago and North Western station by a member of the Waves, woman's unit in the Navy, who smashed a bottle containing water from all the Great Lakes against its side. The car is a streamlined coach of the Chicago and North Western's "400" fleet. The car has been repainted red, white and blue with huge letters on its sides reading "Fly for Navy." It is the first of two such cars to be repainted. The other, which will have "Fly for Army" messages, will be ready in about a week. The roof of the car is red, the window section of the side is white and the lower portion of the side is blue. The wings on this blue background are gold, the insignia on the white background are yellow en-



One of the Streamlined Coaches of the Chicago & North Western Goes on a Recruiting Campaign

closed in a black circle and the letters Fly for Navy are black.

Navy as well as North Western Railway officials were present at the christening ceremony. In dedicating the car to Naval aviation, Judge Charles M. Thomson, trustee of the North Western, said:

"The officers and employees of the Chicago and North Western are proud to take part in the campaign to increase aviation cadet recruiting in the U. S. Navy. We of the North Western, which now is represented by more than 1,600 men in all branches of military service, are glad that this car, which we are dedicating to the cause of naval aviation, will bring its message to thousands of potential Navy aviators in Illinois, Wisconsin, Minnesota and upper Michigan. We look forward to seeing this car do as good a job in war as it has in peace."

Lieutenant Commander Carl G. Olson, senior member of the Naval Aviation Cadet Selection Board in Chicago, thanked the North Western for its co-operation. "We deeply appreciate what this railroad is doing to help us in our recruiting campaign," he said, "and I know that thousands of young men will receive the message it carries. This move on your part is another example of the great desire of every citizen to help in winning the war."

Pullman Sets New Troop Handling Record

All previous records for Pullman troop handling were broken in September when the Pullman Company moved 835,000 troops in its sleeping cars, compared with the previous peak of 750,000 set in August. During the first nine months of this year, the Pullman Company handled 5,185,000 troops.

"The increasing heavy demand for sleeping cars for moving troops has sharply reduced the number of Pullmans available for civilian use," D. A. Crawford, president of the company, stated at a meeting of the board of directors at Chicago on October 22. "The needs of the armed forces, of course, come first and consequently every sleeper is potentially a troop car.

"The co-operation of civilian travelers can be very helpful. They will find that by planning trips well in advance with the transportation agencies, accepting available accommodations, and traveling light they will experience less inconvenience than they had anticipated under the travel conditions existing today."

Opposition to Abandonment of Illinois Terminal Increasing

The ranks of those opposing the abandonment of the Illinois Terminal Railroad increased this week when the Brotherhood of Railroad Trainmen was granted permission to intervene in proceedings before the Illinois Commerce Commission. As the lineup now stands, the union, Senator Wayland Brooks of Illinois, the commission, representatives of nearly a dozen cities and towns and a number of affected individuals and corporations are opposing the abandonment of the railroad as directed by the War Production Board in its scrapping order. The order to scrap the railroad on October 15 was held in abeyance following the contention of the state commission that the lines were essential to the war effort and its order that they be improved. The state commission during recent weeks has been holding hearings on the abandonment and the Office of Defense Transportation has been conducting its own investigation.

On October 22, A. P. Titus, president and general manager of the Illinois Terminal, testified that the railroad would net between $500,000 and $600,000 from the sale of materials requisitioned by the War Production Board on 150 miles of branch lines in central Illinois. Under cross-examination, Mr. Titus testified that business had increased on these branch lines this year, but said, "in my judgment they are still losing money." Losses, he said, were a factor in offering the railroads to the War Production Board.

July Bus Revenues 69.8 Per Cent Above July, 1941

Class I motor carriers of passengers reported July revenues of $27,323,342 as compared with $16,090,810 in July, 1941, an increase of 69.8 per cent, according to the latest compilation prepared by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics from 148 reports representing 153 bus operators. Passengers carried were up 80.2 per cent, from 18,898,870 to 34,061,165.

Also, the Bureau has issued its compilation of railroad passenger traffic statistics for July, showing that the buses are keeping ahead of railroad coaches in the number of passengers carried. Class I roads carried 33,956,425 coach passengers in July, an increase of 56 per cent above July, 1941. Meanwhile, however, railroad passenger revenue from coach business remained above the bus revenue, being $50,781,588 for July, up 89.6 per cent from the same 1941 month.

	Passenger Revenue		Passengers Carried	
	July 1942	July 1941	July 1942	July 1941
New England Region	$1,443,684	$814,855	3,182,157	1,583,568
Middle Atlantic Region	3,381,924	2,160,775	5,345,738	3,066,040
Central Region	4,139,563	2,801,474	5,662,248	3,456,132
Southern Region	6,915,169	3,924,513	8,458,460	4,721,686
Northwestern Region	839,792	606,309	586,703	420,430
Mid Western Region	2,384,773	1,406,114	1,663,203	871,181
Southwestern Region	4,176,396	2,026,429	4,961,261	2,212,102
Rocky Mountain Region	353,019	197,215	197,856	112,383
Pacific Region	3,689,022	2,153,126	4,003,539	2,455,348

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

September Truck Volume 4.3 Per Cent Over August

The volume of freight transported by motor carriers in September increased 4.3 per cent over August and seven per cent over September, 1941, according to American Trucking Associations.

Comparable reports were received by A. T. A. from 204 motor carriers in 40 states. The reporting carriers transported an aggregate of 1,534,065 tons in September, as against 1,471,521 tons in August, and 1,433,557 tons in September, 1941. The A. T. A. index figure, based on the average monthly tonnage of the reporting carriers for the 1938-1940 period as 100, was 180.27.

Approximately 82 per cent of all tonnage transported in September was reported by carriers of general freight. The volume in this category increased 3.7 per cent over August, and seven per cent over September of last year. Transporters of petroleum products, accounting for about 10½ per cent of the total tonnage, showed an increase of 15.2 per cent over August, and held 66.3 per cent over September, 1941. Haulers of iron and steel products reported a little more than 2½ per cent of the total tonnage; their volume showed a decrease of 11.5 per cent under August, and dropped 15.2 per cent under September, 1941. About five per cent of the total was miscellaneous commodities, including tobacco, milk, textile products, bricks, building materials, cement and household goods. Tonnage in this class showed an increase of 1.7 per cent over August, but declined 33.1 per cent under September of last year.

New Seattle-San Francisco Bus Line Authorized by I. C. C.

The Interstate Commerce Commission, in a report of the full commission on reconsideration of an application (MC-89037) of the West Coast Bus Lines to operate certain motor bus routes as a common carrier, has reversed its Division 5 and approved the operation with respect to the route between San Francisco, Calif., and Seattle, Wash., serving all intermediate points. The application was opposed by the Southern Pacific, Union Pacific, Great Northern, and Northern Pacific, and by various bus operators, including Pacific Greyhound Lines and the North Coast Transportation Company, all serving parts of the territory in which the new operation would run.

Basing its decision on an extended survey of the history and relationship of carriers now serving the route over which the applicant has been granted authority to operate, the Commission states that "public convenience and necessity require the service proposed. . . . Each of the existing services has been shown to be materially deficient in one or more important respects, each of which the proposed service will tend to improve."

Whether or not competition actually exists between the Southern Pacific and the bus lines between San Francisco and Portland, Ore., and between the bus lines operating between Portland and Seattle, the report adds, "it does not follow that it is the type of competition which will be

died in a motor car accident north of Meridian on September 21.

Timothy B. Roberts, supervisor of apprentices of the Lehigh Valley, who died after a short illness on October 14, 1942, was 56 years old. He was born in Wellsboro, Pa. Mr. Roberts entered the service of the Lehigh Valley as a call boy at the age of 14. He became a machinist apprentice at Sayre in 1905, and after his apprenticeship was employed in the Sayre shops as a machinist for 11 years. In June, 1918, he was made a foreman and in August, 1924, was made a piecework inspector, continuing in that capacity until February, 1930, when he became supervisor of apprentices. Except for an interval of three years, he remained in that capacity until his death.

Jacob A. Wagner, who retired on December 31, 1940, as general manager of the Des Moines Union Railway Company, died at his home in Des Moines, Iowa, on October 20, 1942, after a prolonged illness. Mr. Wagner was born in Limestoneville, Pa., on July 19, 1864, and entered railroad service with the Chicago, Burlington & Quincy at Shenandoah, Iowa, in 1880. He was promoted successively to operator, agent and train dispatcher and on February 1, 1893, went with the Des Moines Union Railway at Des Moines as superintendent. He became general manager in 1918. Under Mr. Wagner's supervision the Iowa Transfer Railway Company, one of the first joint interchange yards to be established, was constructed in 1906 and Mr. Wagner also served as superintendent and as general manager of that company until the time of his retirement.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 Monthly Reports of Revenues and Expenses Representing 136 Class I Steam Railways
(Switching and Terminal Companies Not Included)

FOR THE MONTH OF AUGUST, 1942 AND 1941

Item	United States		Eastern District		Southern District		Western District	
	1942	1941	1942	1941	1942	1941	1942	1941
Miles of road operated at close of month	230,948	232,226	56,859	57,196	43,669	44,104	130,420	130,926
Revenues:								
Freight	$537,411,800	$410,213,057	$212,670,780	$171,187,192	$101,379,051	$78,696,825	$223,361,969	$160,329,040
Passenger	103,463,192	49,773,137	49,177,831	26,072,784	20,169,909	7,174,605	34,115,452	16,525,748
Mail	8,742,476	8,625,463	3,156,118	3,161,478	1,555,468	1,431,607	4,030,890	4,032,378
Express	7,684,026	4,391,347	2,953,303	1,758,310	1,032,398	691,421	3,698,325	1,941,616
All other operating revenues	26,505,284	20,671,004	11,951,478	10,013,349	3,244,610	2,282,676	11,309,196	8,374,979
Railway operating revenues	683,806,778	493,674,008	279,909,510	212,193,113	127,381,436	90,277,134	276,515,832	191,203,761
Expenses:								
Maintenance of way and structures	77,248,454	56,209,812	32,508,037	23,502,521	12,201,192	8,846,194	32,539,225	23,861,097
Maintenance of equipment	102,782,140	84,138,974	45,253,838	39,326,007	19,940,954	15,494,355	37,587,348	29,318,612
Traffic	9,529,713	9,144,394	3,458,663	3,307,339	1,850,087	1,756,165	4,220,963	4,080,890
Transportation—Rail line	189,827,750	149,322,576	85,265,295	68,479,944	32,237,509	24,242,297	72,324,946	56,600,335
Transportation—Water line	1,159	13,854	.....	.....	.....	.....	1,159	13,854
Miscellaneous operations	6,966,403	4,336,814	2,698,947	1,827,434	1,078,406	492,545	3,189,050	2,016,835
General	12,936,684	11,049,392	5,189,438	4,375,787	2,480,106	2,145,238	5,267,140	4,528,367
Transportation for investment—Cr.*	.....	372,537	.....	74,621	.....	50,702	.....	247,214
Railway operating expenses	399,292,303	313,843,279	174,374,218	140,744,411	69,788,254	52,926,092	155,129,831	120,172,776
Net revenue from railway operations	284,514,475	179,830,729	105,535,292	71,448,702	57,593,182	37,351,042	121,386,001	71,030,985
Railway tax accruals	132,893,623	56,756,638	47,245,103	22,349,914	34,433,591	16,031,121	51,214,929	18,375,603
Railway operating income	151,620,852	123,074,091	58,290,189	49,098,788	23,159,591	21,319,921	70,171,072	52,655,382
Equipment rents—Dr. balance	12,955,925	8,784,191	6,138,756	4,154,078	591,020	d529,248	6,226,149	5,159,361
Joint facility rent—Dr. balance	3,400,852	2,878,411	1,743,310	1,561,755	439,868	349,803	1,217,674	966,853
Net railway operating income	135,264,075	111,411,489	50,408,123	43,382,955	22,128,703	21,499,366	62,727,249	46,529,168
Ratio of expenses to revenues (per cent)	58.4	63.6	62.3	66.3	54.8	58.6	56.1	62.9
Depreciation included in operating expenses	23,059,161	18,260,451	11,254,809	8,019,792	3,928,120	3,650,426	7,876,232	6,590,233
Amortization of defense projects	7,683,453	26,992	2,466,672	7,995	2,146,790	18,997	3,069,991	.....
Pay roll taxes	14,891,893	11,790,846	6,445,794	5,251,907	2,586,215	1,972,281	5,859,884	4,566,658
All other taxes	‡118,001,730	44,965,792	40,799,309	17,098,007	31,847,376	14,058,840	45,355,045	13,808,945

FOR EIGHT MONTHS ENDED WITH AUGUST, 1942 AND 1941

Miles of road operated at close of month‡	231,374	232,278	56,898	57,233	43,831	44,175	130,645	130,870
Revenues:								
Freight	$3,743,659,405	$2,821,742,032	$1,542,323,481	$1,216,969,809	$735,075,901	$552,181,790	$1,466,260,023	$1,052,590,433
Passenger	587,681,025	334,547,925	281,861,230	171,983,682	112,611,250	57,224,410	193,208,545	105,339,833
Mail	69,897,852	68,878,927	25,452,203	25,520,396	12,506,545	11,813,530	31,939,104	31,545,001
Express	55,159,898	37,724,237	19,605,123	14,829,533	9,054,707	7,750,576	26,500,068	15,144,128
All other operating revenues	173,349,165	140,651,009	81,471,304	69,283,865	22,304,986	17,221,732	69,572,875	54,145,412
Railway operating revenues	4,629,747,345	3,403,544,130	1,950,713,341	1,498,587,285	891,553,389	646,192,038	1,787,480,615	1,258,764,807
Expenses:								
Maintenance of way and structures	500,722,600	374,604,734	203,442,039	151,740,731	86,899,638	66,125,255	210,380,923	156,738,748
Maintenance of equipment	785,981,982	628,226,078	353,561,327	292,818,894	150,543,064	116,745,166	281,877,591	218,662,016
Traffic	77,485,726	73,238,895	28,092,955	26,129,484	15,313,108	14,264,559	34,079,663	32,844,852
Transportation—Rail line	1,434,512,328	1,106,953,229	656,375,274	512,476,164	244,682,966	186,586,793	533,454,088	407,890,272
Transportation—Water line	21,726	3,057,478	.....	.....	.....	.....	21,726	3,057,478
Miscellaneous operations	45,013,944	29,756,834	18,223,459	12,813,608	7,287,410	4,364,226	19,503,075	12,579,000
General	103,293,385	88,733,119	41,547,167	35,000,888	19,831,444	17,256,979	41,914,774	36,475,252
Transportation for investment—Cr.*	.....	2,343,245	.....	406,029	.....	493,437	.....	1,443,779
Railway operating expenses	2,947,031,691	2,302,227,120	1,301,242,221	1,030,573,740	524,557,630	404,849,541	1,121,231,840	866,803,839
Net revenue from railway operations	1,682,715,654	1,101,317,010	649,471,120	468,013,545	366,995,759	241,342,497	666,248,775	391,960,968
Railway tax accruals	750,188,665	361,228,044	292,884,285	154,700,553	193,537,756	89,323,314	263,766,624	117,204,177
Railway operating income	932,526,989	740,088,966	356,586,835	313,312,992	173,458,003	152,019,183	402,482,151	274,756,791
Equipment rents—Dr. balance	90,567,888	66,383,272	44,635,997	31,871,550	5,309,094	1,622,185	40,622,797	32,889,537
Joint facility rent—Dr. balance	25,182,768	22,090,296	13,374,454	12,049,091	2,824,674	2,475,742	8,983,640	7,565,463
Net railway operating income	816,776,333	651,615,398	298,576,384	269,392,351	165,324,235	147,921,256	352,875,714	234,301,791
Ratio of expenses to revenues (per cent)	63.7	67.6	66.7	68.8	58.8	62.7	62.7	68.9
Depreciation included in operating expenses	161,215,125	143,652,838	73,288,291	63,065,372	31,763,188	28,931,762	56,163,646	51,655,704
Amortization of defense projects	48,716,999	55,179	16,003,708	19,638	12,804,874	35,541	19,908,417	.....
Pay roll taxes	110,672,469	85,799,844	48,634,377	38,225,228	19,555,693	14,884,935	42,482,399	32,689,681
All other taxes	†639,516,196	275,428,200	244,249,908	116,475,325	173,982,063	74,438,379	221,284,225	84,514,496

d Decrease, deficit, or other reverse items.
‡ Represents an average of the mileage reported at the close of each month within the period.
* General Account VIII. Transportation for Investment—Cr. canceled effective January 1, 1942.
‡ Includes Federal income tax, surtax and excess profits tax amounting to $94,972,331.
† Includes Federal income tax, surtax and excess profits tax amounting to $461,546,488.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Table of Freight Operating Statistics Appears on Next Left-Hand Page

closed in a black circle and the letters Fly for Navy are black.

Navy as well as North Western Railway officials were present at the christening ceremony. In dedicating the car to Naval aviation, Judge Charles M. Thomson, trustee of the North Western, said:

"The officers and employees of the Chicago and North Western are proud to take part in the campaign to increase aviation cadet recruiting in the U. S. Navy. We of the North Western, which now is represented by more than 1,600 men in all branches of military service, are glad that this car, which we are dedicating to the cause of naval aviation, will bring its message to thousands of potential Navy aviators in Illinois, Wisconsin, Minnesota and upper Michigan. We look forward to seeing this car do as good a job in war as it has in peace."

Lieutenant Commander Carl G. Olson, senior member of the Naval Aviation Cadet Selection Board in Chicago, thanked the North Western for its co-operation. "We deeply appreciate what this railroad is doing to help us in our recruiting campaign," he said, "and I know that thousands of young men will receive the message it carries. This move on your part is another example of the great desire of every citizen to help in winning the war."

Pullman Sets New Troop Handling Record

All previous records for Pullman troop handling were broken in September when the Pullman Company moved 835,000 troops in its sleeping cars, compared with the previous peak of 750,000 set in August. During the first nine months of this year, the Pullman Company handled 5,185,000 troops.

"The increasing heavy demand for sleeping cars for moving troops has sharply reduced the number of Pullmans available for civilian use," D. A. Crawford, president of the company, stated at a meeting of the board of directors at Chicago on October 22. "The needs of the armed forces, of course, come first and consequently every sleeper is potentially a troop car.

"The co-operation of civilian travelers can be very helpful. They will find that by planning trips well in advance with the transportation agencies, accepting available accommodations, and traveling light they will experience less inconvenience than they had anticipated under the travel conditions existing today."

Opposition to Abandonment of Illinois Terminal Increasing

The ranks of those opposing the abandonment of the Illinois Terminal Railroad increased this week when the Brotherhood of Railroad Trainmen was granted permission to intervene in proceedings before the Illinois Commerce Commission. As the lineup now stands, the union, Senator Wayland Brooks of Illinois, the commission, representatives of nearly a dozen cities and towns and a number of affected individuals and corporations are opposing the abandonment of the railroad as directed by the War Production Board in its scrapping order. The order to scrap the railroad on October 15 was held in abeyance following the contention of the state commission that the lines were essential to the war effort and its order that they be improved. The state commission during recent weeks has been holding hearings on the abandonment and the Office of Defense Transportation has been conducting its own investigation.

On October 22, A. P. Titus, president and general manager of the Illinois Terminal, testified that the railroad would net between $500,000 and $600,000 from the sale of materials requisitioned by the War Production Board on 150 miles of branch lines in central Illinois. Under cross-examination, Mr. Titus testified that business had increased on these branch lines this year, but said, "in my judgment they are still losing money." Losses, he said, were a factor in offering the railroads to the War Production Board.

July Bus Revenues 69.8 Per Cent Above July, 1941

Class I motor carriers of passengers reported July revenues of $27,323,342 as compared with $16,090,810 in July, 1941, an increase of 69.8 per cent, according to the latest compilation prepared by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics from 148 reports representing 153 bus operators. Passengers carried were up 80.2 per cent, from 18,898,870 to 34,061,165.

Also, the Bureau has issued its compilation of railroad passenger traffic statistics for July, showing that the buses are keeping ahead of railroad coaches in the number of passengers carried. Class I roads carried 33,956,425 coach passengers in July, an increase of 56 per cent above July, 1941. Meanwhile, however, railroad passenger revenue from coach business remained above the bus revenue, being $50,781,588 for July, up 89.6 per cent from the same 1941 month.

	Passenger Revenue		Passengers Carried	
	July 1942	July 1941	July 1942	July 1941
New England Region	$1,443,684	$814,855	3,182,157	1,583,568
Middle Atlantic Region	3,381,924	2,160,775	5,345,738	3,066,040
Central Region	4,139,563	2,801,474	5,662,248	3,456,132
Southern Region	6,915,169	3,924,513	8,458,460	4,721,686
Northwestern Region	839,792	606,309	586,703	420,430
Mid Western Region	2,384,773	1,406,114	1,663,203	871,181
Southwestern Region	4,176,396	2,026,429	4,961,261	2,212,102
Rocky Mountain Region	353,019	197,215	197,856	112,383
Pacific Region	3,689,022	2,153,126	4,003,539	2,455,348

The breakdown by regions of the bus revenue and traffic figures, which exclude data on charter or special party service, is given in the accompanying table.

September Truck Volume 4.3 Per Cent Over August

The volume of freight transported by motor carriers in September increased 4.3 per cent over August and seven per cent over September, 1941, according to American Trucking Associations.

Comparable reports were received by A. T. A. from 204 motor carriers in 40 states. The reporting carriers transported an aggregate of 1,534,065 tons in September, as against 1,471,521 tons in August, and 1,433,557 tons in September, 1941. The A. T. A. index figure, based on the average monthly tonnage of the reporting carriers for the 1938-1940 period as 100, was 180.27.

Approximately 82 per cent of all tonnage transported in September was reported by carriers of general freight. The volume in this category increased 3.7 per cent over August, and seven per cent over September of last year. Transporters of petroleum products, accounting for about 10½ per cent of the total tonnage, showed an increase of 15.2 per cent over August, and held 66.3 per cent over September, 1941. Haulers of iron and steel products reported a little more than 2½ per cent of the total tonnage; their volume showed a decrease of 11.5 per cent under August, and dropped 15.2 per cent under September, 1941. About five per cent of the total was miscellaneous commodities, including tobacco, milk, textile products, bricks, building materials, cement and household goods. Tonnage in this class showed an increase of 1.7 per cent over August, but declined 33.1 per cent under September of last year.

New Seattle-San Francisco Bus Line Authorized by I. C. C.

The Interstate Commerce Commission, in a report of the full commission on reconsideration of an application (MC-89037) of the West Coast Bus Lines to operate certain motor bus routes as a common carrier, has reversed its Division 5 and approved the operation with respect to the route between San Francisco, Calif., and Seattle, Wash., serving all intermediate points. The application was opposed by the Southern Pacific, Union Pacific, Great Northern, and Northern Pacific, and by various bus operators, including Pacific Greyhound Lines and the North Coast Transportation Company, all serving parts of the territory in which the new operation would run.

Basing its decision on an extended survey of the history and relationship of carriers now serving the route over which the applicant has been granted authority to operate, the Commission states that "public convenience and necessity require the service proposed. . . . Each of the existing services has been shown to be materially deficient in one or more important respects, each of which the proposed service will tend to improve."

Whether or not competition actually exists between the Southern Pacific and the bus lines between San Francisco and Portland, Ore., and between the bus lines operating between Portland and Seattle, the report adds, "it does not follow that it is the type of competition which will be

productive of all that the public has a right to expect in a first-class bus service."

In a dissenting opinion in which Commissioners Miller, Rogers, and Patterson joined, Commissioner Mahaffie points out that the hearing in the case closed four years ago, and that important changes in transportation conditions have occurred since. "The action of the majority appears to be based primarily on the theory that additional competition in this area will be in the public interest," he adds. "Under present conditions the exact opposite may well be the case. In fact, it seems doubtful if such competition would be permitted by the Office of Defense Transportation even if this applicant could acquire the facilities necessary to conduct transportation."

Terminal Area Defined

In administering the provisions of section 202(c)(2) of the Interstate Commerce Act, the Interstate Commerce Commission will hereafter consider that a carrier's "terminal area" is the "corporate limits or the designated or recognized limits of the village, town, or city in which transfer, collection, or delivery service by motor vehicle is performed, unless the carrier incorporates in its tariffs or schedules on file with this commission a description of a terminal area either greater or less in extent than the corporate area." And "it is not necessary that the terminal areas of all line-haul carriers serving any particular point be the same."

Section 202(c)(2) is the one wherein it is provided that the performance by motor vehicle (whether under an agency or contractual arrangement) of terminal services for railroads, express companies, line-haul motor carriers, water carriers, or freight forwarders shall be exempt from Motor Carrier Act regulation, but shall be regulated "in the same manner as the transportation . . . to which such services are incidental." The commission announced its policy in a report on further consideration in MC-13530 which embraced also reconsideration of No. MC-43404.

These proceedings involved terminal services performed at Buffalo, N. Y., and Houston, Tex., and they were reopened by the commission in order to clarify certain statements in the prior reports which were "misleading" as to the terminal-area matter. Commissioner Lee, concurring-in-part, thought that a carrier's terminal area should be defined in its tariffs; he did not agree that, in the absence of such definition, the commission should accept the corporate limits of the village, town, or city involved.

More Scrap Reported

As a result of intensive company campaigns at all on-line points during the first nine months of 1942, the Gulf Lines of the Santa Fe accumulated and contributed nearly 7,500 tons of scrap metal to the Nation's salvage pile. This scrap consisted of 4,300 tons of high-grade miscellaneous scrap and 3,200 tons of scrap rail. The Gulf Lines scrap drive was in full swing well in advance of an appeal for aid issued to railroads by the salvage director of the War Production Board last summer. Employees of the railroad's store department—using an electric magnet mounted on a railroad car—regularly gather the scrap accumulated at roundhouses, shops and stations. The metal is transported to store department headquarters at Cleburne, Tex. Exploration of new fields previously considered unprofitable yielded additional scrap tonnage—all employees being instructed not to overlook a single piece of metal, no matter how small—and this all-out salvage policy will continue on the Gulf Lines for the duration.

Over 10,230 net tons of scrap iron and steel have been collected and turned in to the Nation's salvage markets from December 7, 1941, to October 1, 1942, by the Chicago & Eastern Illinois. This scrap includes rails, metal from locomotives and cars as well as miscellaneous sources. The railroad's scrap drive involves a systematic search for the metal in every shop, roundhouse and other buildings as well as along the right of way, and will be continued for the duration of the war, under the direction of the president.

In the first nine months of 1942, the Central of Georgia collected 7,292 tons of scrap iron and steel from its line of road. This total included worn out tools, old rail and materials which were gathered in routine scrap collections, and also materials gathered as a result of a painstaking salvage campaign over the entire system. In this scrap was 63,360 lb. of old rubber, mostly worn out air hose discarded when scrap rubber had no strategic value or importance but which was dug up to serve war needs.

New York Railroad Club Dinner

After thorough consideration, the officers and executive committee of the New York Railroad Club have decided to hold its 70th Anniversary Dinner on Thursday evening, December 10, 1942. It was fully recognized that a dinner of the usual type would be quite out of place during the war emergency. On the other hand, it was felt that the railway and railway supply industries are such vital factors in our war and defense program that the objective of the annual gathering might well be a program which would inspire and encourage the members of the club to still greater efforts and accomplishments. Steps will be taken also to increase the net proceeds from the dinner, in order to make therefrom a substantial contribution to Army and Navy relief.

The general chairman of the dinner is J. T. Talbot of the American Brake Shoe & Foundry Company. He will be assisted by several vice-general chairmen, including S. F. Pryor, Jr., C. C. Hubbell, W. L. Richeson and J. E. Davenport. The chairmen and vice-chairmen of the other committees are as follows:

Seating Committee: Chairman, C. C. Fletcher; vice-chairmen, T. P. O'Brian, J. C. Glenn and R. G. Richardson.

Out of Town Committee: Chairman, W. L. Richeson; vice-chairmen, C. A. Gill, P. J. Christy, W. C. Smith, W. H. Morris, R. G. Sonquist and C. C. Pitcher.

Dinner Committee: Chairman, J. S. Henry; vice-chairmen, F. S. Austin, John G. Ederlin, E. A. Jones, Edward Laterman and H. K. Williams.

Advisory Committee: Chairman, Charles E. Smith; vice-chairmen, S. F. Pryor, Jr., L. S. Peabody and J. W. Hulme.

Publicity Committee: Chairman, Roy V. Wright; vice-chairman, J. M. Fitzgerald.

Attendance Committee: Chairman, S. L. Poorman; vice-chairman, Charles R. Ellicott.

Reception Committee: Chairman, Frank Hedley; vice-chairmen, W. G. Curren, Charles Shriver, R. F. O'Leary, P. E. Pfeifer and G. LeBoutillier.

Entertainment Committee: Chairman, J. S. Henry; vice-chairmen, H. K. Williams, Edward Laterman, W. Tom Ashe and B. F. Cordts.

Guaranty Trust Views the Railroads in Wartime

The efficient operation of the railroads under private control during the present emergency, as contrasted with conditions existing during government operation in World War I, is discussed in the current issue of the Guaranty Survey, monthly economic review published by the Guaranty Trust Company of New York.

The Survey reminds its readers that the great increase in traffic and operating revenues from 1916 to 1920 brought no gain in net earnings to the railroads as a whole, due largely to staggering increases in operating costs. In the present emergency, however, by holding expenses down to reasonable limits the carriers have attained a substantial improvement in net income, despite rising costs of material and equipment and higher wages. As for the volume of freight traffic carried, the Survey estimates that if the rate of gain shown by the roads for the first seven months of 1942 continues for the year as a whole, the 1942 total will be more than half again as large as that for 1918, the peak year of World War I. Military freight traffic has greatly increased due to large-scale mechanization of the armed forces, traffic requirements of the Army during the last nine months having been twice those of the entire last war.

Passenger traffic has greatly increased due partly to the curtailed use of automobiles and to the movement of troops. Troop movements during the first nine months of our participation in the present war totaled 6,500,000, more than three times the number during a comparable period in the last war. In 1917-18, the average soldier was moved three times between induction and embarkation for overseas service. Now he averages six moves before leaving the country—due to the more intensive training now imparted.

After setting forth the steady progress achieved by the railroads in operating efficiency which has enabled them to carry much greater freight and passenger loads than they handled in World War I with much less rolling stock than was available in 1917, the Survey calls attention to the fact that, forewarned by experience in the last war, the railroads several years ago began specific preparation for war service, with the result that when the present conflict began the roads were able to act co-operatively according to prearranged plans. In this connection, the article mentioned the existing collaboration between shippers and receivers of

freight—which has made possible the heavier and faster loading and the quicker return of cars—and the centralized direction provided by the Office of Defense Transportation under the able leadership of Joseph B. Eastman.

According to the Survey, a general view of the outlook in the field of railway transportation reveals two outstanding needs: (1) that the carriers be provided with a sufficient supply of materials and equipment to continue the excellent record of service they have thus far maintained (the present transportation situation in Germany was held up as evidence that there are few needs more urgent than that of keeping the rail transport system at the peak of efficiency), and (2) that the roads be permitted to retain a sufficient portion of their earnings to sustain credit, encourage adequate maintenance of facilities and to bolster their financial position, which still shows the effects of long years of reduced income. It was the opinion of the Survey that railway labor, shippers' groups and public authorities have too often been inclined to seize upon any increase in railway earnings as an opportunity to make new financial demands on the carriers. Such a tendency under existing conditions would have disastrous results.

Freight Tax Effective December 1

The new three per cent tax on amounts paid for transportation of property, except in the case of coal where the amount is four cents per short ton, will become effective December 1, while the increase from five to 10 per cent in amounts paid for passenger transportation will become effective November 1. In the former case there was a specific provision stipulating that the tax would become effective "on the first day of the first month which begins more than 30 days after the date of enactment of this act." President Roosevelt signed the bill on October 21.

Meanwhile, the passenger tax, being among existing excise taxes which were increased, comes under the general provision making such levies effective "on the first day of the first month which begins more than 10 days after the date of the enactment of this act." Other provisions of specific interest to railroads included those relating to the acquisition by railroads of their own securities and the tax base of a reorganized company. These remained in the final version as they were reported by the Senate committee on finance (see *Railway Age* of October 10, page 583).

With respect to provisions covering amounts set aside for maintenance which is deferred because of the wartime priorities situation, the railroads did not get what they sought; although the so-called two-year carry-back provision is designed to afford some relief in connection with such matters. The railroads favored a provision which would qualify as allowable deductions from gross income the amounts which they accrue for deferred maintenance under the recent Interstate Commerce Commission order allowing such accruals provided they are preserved as a true cash reserve available for expenditure on maintenance work when the necessary materials do become available. The carry-back provision does about the same thing, but it puts a two-year time limit on the set-up. Specifically, it permits a two-year carry-back of operating losses and of unused excess-profits credit, thus, as the Senate committee put it, affording the "same type of relief in periods of declining profits which the present two-year carry-forward of operating losses and unused excess-profits credit affords in periods of increasing profits."

Abandonments

Atlantic Coast Line.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon a line between Four Holes, S. C., and Pregnall, 8.2 miles.

Baltimore & Ohio.—This road and the Buffalo & Susquehanna have applied to the Interstate Commerce Commission for authority, respectively, to abandon operation of and abandon the latter's lines between Sinnemahoning, Pa., and Burrows, 44.5 miles, and between Wharton, Pa., and Austin, nine miles. The application states that the lines were so seriously damaged by floods of last July that it would cost $658,000 to rehabilitate them. Such an expenditure is not believed warranted in view of present and prospective traffic, and the "need for rail and scrap for the war effort."

Chicago, Burlington & Quincy.—Authority has been granted this road by Division 4 of the Interstate Commerce Commission to abandon its branch from Chester, Nebr., to Hebron, 11.4 miles.

Chicago, Burlington & Quincy.—Examiner Lucian Jordan has recommended that the Interstate Commerce Commission authorize this road to abandon its branch from Sedan, Iowa, to Moulton, 4.83 miles, and to abandon operation over the Wabash from Moulton to Bloomfield, 14.14 miles.

Chicago, Milwaukee, St. Paul & Pacific.—This road and the Chicago, Terre Haute & Southwestern have applied to the Interstate Commerce Commission for authority, respectively, to abandon operation of and abandon the C., T. H. & S. line between Blackhawk, Ind., and Hymera, six miles.

Chicago & North Western.—This road has applied to the Interstate Commerce Commission for authority to abandon a 30.9-mile branch line between New Ulm, Minn., and Kasota.

Chicago, Rock Island & Pacific.—Division 4 of the Interstate Commerce Commission has granted this road authority to abandon its branch from Chickasha, Okla., to Lindsay, 26.29 miles, of which 1.51 miles consists of trackage rights over a line of the Atchison, Topeka & Santa Fe.

Illinois Central.—This road and its subsidiary, the Chicago, St. Louis & New Orleans, have filed with the Interstate Commerce Commission an application seeking authority, respectively to abandon operation of and abandon the latter's 16.08-mile line between Kevil, Ky., and East Cairo.

Louisville & Nashville.—Division 4 of the Interstate Commerce Commission has authorized this road to abandon its branch from Graces, Ala., to Redding, 2.8 miles.

Nashville, Chattanooga & St. Louis. The Interstate Commerce Commission, Division 4, has authorized this road to abandon that part of its Centreville branch extending from Hohenwald, Tenn., to Allen's Creek, 10.38 miles.

Port San Luis Transportation Co.—Authority has been granted this company by the Interstate Commerce Commission, Division 4, to abandon its entire line extending from Port San Luis, Calif., to San Luis Obispo, about 12.11 miles of narrow gage track.

Union Pacific.—Division 4 of the Interstate Commerce Commission has authorized the Oregon Short Line to abandon, and the Union Pacific to abandon operation of, its branch line from Ballard Junction, Utah, to a point near Benson, 2.95 miles.

Union Pacific.—A report proposed to the Interstate Commerce Commission by Examiner R. Romero recommends that authority be denied the Oregon-Washington Railroad & Navigation Co. to abandon, and the Union Pacific to abandon operation of, a branch from Vale, Oregon, to Brogan, 23.7 miles, on the ground that sugar beet growers served by it cannot be served by other means of transportation.

Western Maryland.—Authority has been granted by Division 4 of the Interstate Commerce Commission to the Fairmont Bingamon to abandon, and the Western Maryland to abandon operation of, part of a branch extending from milepost 5.7 near Pine Bluff, W. Va., to the end of the line at Wyatt, 2.39 miles.

Construction

Delaware & Hudson.—This company has awarded a contract for an extension to seven stalls of its enginehouse at Rouses Point, N. Y., at estimated cost of $20,000, to the John J. Fitzpatricks Sons Co. of Plattsburg, N. Y.

Louisville & Nashville.—This road has applied to the Interstate Commerce Commission for authority to construct three segments of line totaling 17.5 miles between Memphis Junction, Ky., and Memphis, Tenn. The proposed work will be a relocation project required because three similar segments, which the application seeks authority to abandon, will be inundated by the Kentucky Reservoir created by the Tennessee Valley Authority dam now under construction at Gilbertsville, Ky.

Supply Trade

E. P. Barry has been appointed coordinator of plants for the **Chicago Pneumatic Tool Company.** He will supervise machine equipment, tool designing and production methods for the company's four plants located at Detroit, Mich., Cleveland, Ohio, Franklin, Pa., and Garfield, N. J. Mr. Barry was formerly associated with the Glenn L. Martin Company at Baltimore, Md.

Carl G. Howard, manager of the rectifier division of the **Fansteel Metallurgical Corp.,** North Chicago, Ill., has been promoted to assistant general sales manager and has been succeeded by Glen Ramsey of the sales department. Mr. Howard was born at Newark, Ohio, on May 21, 1898, and after engaging in electrical wiring and contracting work, was employed in the electrical department of the Baltimore & Ohio at Cleveland, Ohio. From 1921 to 1923, he engaged in electrical instrument sales and service work for the Mills Novelty Co., Chicago, and in the following year was manager of the radio and service department of the Fergus Electric Co., Zanesville, Ohio. From 1924 to 1926, he was on the engineering staff of the Chicago Engineering Works, Chicago, from which position he resigned to enter the employ of the Fansteel Metallurgical Corp., in the railway and industrial sales-engineering department. Since 1933, he has been manager of the rectifier division of that company.

The Flannery Bolt Company was presented with the Army-Navy "E" award for high achievement in the production of war equipment on October 9. W. T. Kilborn, president, accepted the award for the company, and A. F. Allen accepted for the employees.

The Army-Navy "E" flag for excellence in war production was presented to the Hazard Insulated Wire Works division of the **Okonite Company** on October 10. Four employees, Charles Hoats, David Jones, John Williams and Charles Downs, with a total of 187 years of service, received the Army-Navy "E" insignia, as representatives of their fellow workers, from Col. James A. Stevens, commanding officer of the Indiantown Gap, Pa., military reservation.

The Aurora, Ill., plant of the **Independent Pneumatic Tool Company** was awarded the Army-Navy "E" banner and individual pins for its employees on October 8 for outstanding production of Thor pneumatic and electric tools. The day of the presentation was officially proclaimed Army-Navy day by the city of Aurora, and a throng of more than 30,000 witnessed a military parade which proceeded to the Thor plant for the ceremonies. The presentations were made to Neil C. Hurley, Jr., vice-president of the company, and to six employee representatives of the plant force.

The Army-Navy "E" flag for excellence in war production was presented to the storage battery division of the **Philco Corporation** at ceremonies held at the company's plant, Trenton, N. J., on October 7. The presentation coincided with the celebration of Philco's 50th anniversary. High-ranking Army and Navy officials, a color guard from Fort Dix, N. J., several squads of soldiers, and 1,000 employees and their friends were present at the ceremonies.

Rear Admiral Wat T. Cluverius, USN (Ret.), presented the flag to M. W. Heinritz, general manager of the storage battery division, and to George Demp and Max Hart, who have been connected with the company for 36 and 35 years, respectively. Colonel Oscar C. Maier, director of the signal corps general development laboratory at Ft. Monmouth, N. J., presented silver Army-Navy "E" insignia to E. W. Buckley, plant manager; C. F. Bradley, president of the United Electrical, Radio and Machine Workers of America, Local No. 108, and Hilda C. Wiegand, representing the women employees.

The world's largest magnesium foundry is nearing completion and will soon be placed in operation by the **Howard Foundry Company,** Chicago. When the foundry, which will have a monthly production of over 500,000 lb. of castings, is completed, the Howard Company will move its general offices to the new plant at 4900 Bloomingdale Road. Although the plant will not reach peak production until 1943, furnaces have been set up and molds made so that production will be started as soon as buildings are completed. The new plant has already developed processes for making magnesium castings of a larger size than have been hitherto commercially practical. Single castings up to seven and eight feet in diameter will be included as part of the normal output.

The original Howard Foundry, which has been awarded the Army-Navy "E" burgee for excellence in war production, will henceforth be known as the Aluminum division, and will confine its activities to the casting of that metal. The Howard Company has acquired the Aurora Foundry Co., Aurora, Ill., which will hereafter handle the production of all brass, bronze and copper castings, and which will be known as the Bronze division of the Howard Foundry Company. This division is producing large brass, bronze and copper castings for naval construction.

OBITUARY

Albert E. Crone, vice-president and general manager, with headquarters at Lackawanna, N. Y., for the Buffalo Brake Beam Company of New York, died in Buffalo, N. Y., on October 18. He was 70 years of age. Mr. Crone was associated with the New York Central from 1892 to 1912, leaving in that latter year to join the Buffalo Brake Beam Company, where he has been employed as storekeeper, plant superintendent, and, for the past 20 years, as vice-president and general manager. He was a member of the Central Railroad Club of Buffalo, and had been active in the Brake Beam division of the Master Car Builders and in the Association of American Railroads.

Financial

ALABAMA GREAT SOUTHERN.—*New Bond Issue Approved.*—Stockholders of the Alabama Great Southern on October 23 authorized a new first mortgage bond issue of $15,000,000. Of this total, $9,500,000 of 25-year 3¼ per cent bonds, series A, were sold immediately and the net proceeds, together with treasury cash, will be deposited with the Guaranty Trust Company of New York against release of $4,312,000 principal amount of first consolidated mortgage, series A, 5 per cent bonds and $5,206,000 principal amount of first consolidated mortgage, series B, 4 per cent bonds, which mature December 1, 1943. The railroad will offer to purchase these bonds sometime between December 1 and December 23, 1942, at a flat price of 104½ per cent for the 5 per cent bonds and 103½ per cent for the 4 per cent bonds.

BANGOR & AROOSTOOK.—*Bonds.*—Division 4 of the Interstate Commerce Commission has approved conditionally purchase by the Reconstruction Finance Corporation of not more than $4,000,000 of four per cent collateral trust bonds of this company, to be issued for the purpose of paying at maturity, January 1, 1943, certain of its five per cent bonds of equal face value.

CENTRAL OF GEORGIA.—*Interest Payment Asked.*—The Liberty National Bank & Trust Co. of Savannah, Ga., trustee for the first mortgage 5 per cent bonds due November 1, 1945, of this railroad, has filed a petition in the United States district court at Savannah, asking payment of past due interest on this $7,000,000 issue. The petition is reported to call for payment of interest arrears aggregating $2,975,000. Hearing has been set for October 29 in New York, at which time a similar petition for payment of interest made by the Central Hanover Bank & Trust Co. of New York, trustee for the Chattanooga, Rome & Southern first mortgage 5 per cent bonds, will be considered.

CHESAPEAKE WESTERN.—*Acquisition.*—This road has applied to the Interstate Commerce Commission for authority to acquire all properties of the Valley "in existence as of October 1, 1942," and to operate the same, except that part known as the Lexington (Va.) terminal which will be conveyed to the Chesapeake & Ohio and the 35.42-mile line between Staunton, Va., and East Lexington, which will be abandoned pursuant to a previous order of the commission. Thus the C. W. proposes to add to its present 27.73-mile line extending from Elkton, Va., to Bridgewater, the 24.64-mile section of Valley line between Harrisonburg, Va., and Staunton. It proposes to finance the transaction by borrowing $150,000 on open account from its president, D. W. Thomas.

CHICAGO, BURLINGTON & QUINCY.—*Notes of Burlington Transportation Co.*—Examiner William L. Fulton in his proposed report to the Interstate Commerce Commission has recommended that the Commission deny the application of the Burlington Transportation Company to is-

News Department continued on next left-hand page

STEAM POWER IS STILL SUPREME

Serving THE GREAT SOUTHWEST!

Again the Southwest becomes a frontier! Today it is the training center for thousands of our fighting men, one of the important locations of airplane production, and a vast source of food supply . . . all so vitally essential to America's war effort.

Just as the railroads opened this great area to early American pioneers, they are today serving the Southwest with vitally needed transportation. On the Southern Pacific Lines, operating along a 13,000-mile front, Lima-built Steam locomotives, like the 2-8-8-4 Mallet shown above, are providing the hauling capacity required to keep troops, food and munitions rolling.

Steam Power is Still Supreme . . . the keystone of modern transportation.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

sue four per cent unsecured promissory notes in the amount of $1,869,940.34 to cover its open account indebtedness to the Chicago, Burlington & Quincy, suggesting that current earnings should be employed for this purpose to the extent available.

DELAWARE, LACKAWANNA & WESTERN. —*Court Restrains Rental Payment.*—On October 13, in an action brought by the government against the Warren Railroad and the Delaware, Lackawanna & Western in the United States district court for the southern district of New York, to collect income taxes assessed against the Warren, the court issued a restraining order, under the terms of which the D. L. & W. was prohibited from paying on October 15, to the stockholders of the Warren, the rental payable on that date under the lease between the two companies.

ERIE.—*Absorbs Ten Underlying Companies; Declares Dividend.*—Ten underlying companies, previously owned through stock control, have been absorbed by the Erie. The ten companies are the Long Dock Company; the Paterson, Newark & New York railroad; the New York, Lake Erie & Western Docks & Improvement Co.; the Erie Terminals railroad; the Penhorn Creek railroad; the Arlington railroad; the Bergen County railroad; the Bergen & Dundee railroad; the Docks Connecting Railway Company; and the Newark & Hudson railroad.

On October 23 the Erie declared a dividend of 50 cents per share on the common stock and certificates of beneficial interest, payable December 10. An initial payment of the same amount was paid on July 10, which marked the first common disbursement by the railroad since 1866.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE. — *Reorganization.* — The District Court at Minneapolis, Minn., on October 27, announced that no more testimony or information is required in connection with the reorganization of the Soo Line and ordered that the record show that "the case has been submitted." Three weeks ago the court considered the merits of the plan and, following pleas filed by two objecting interests, adjourned proceedings to October 24, when, it said, all parties to the reorganization would be notified whether it wanted additional evidence or information. The action cleared the way for a final decision at an early date.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Reorganization Expenses.*—Division 4 of the Interstate Commerce Commission has determined the amounts of claims for allowances of compensation for services rendered and reimbursement of expenses in this company's reorganization proceedings. The total amount claimed was $249,626, of which the report allows $151,651. A majority of the small claims were allowed in full, but most of the larger ones were scaled down considerably. Two were disallowed entirely, one of Edward Lamb, counsel for certain owners of first consolidated mortgage bonds, who asked for $16,110, and one of Cadwalader, Wickersham & Taft, counsel for a protective committee for holders of Wisconsin Central first general mortgage bonds, who asked for $1,552. The largest claims allowed were those of Sidley, McPherson, Austin & Burgess, counsel for a group of life insurance companies, who claimed $89,488 and received $64,507, and Oliver & Donnally, counsel for a group of mutual savings banks, whose claim for $45,000 was reduced to $30,000.

RED RIVER & GULF.—*Deficit Status.*—Division 4 of the Interstate Commerce Commission has found that this company is not entitled to benefit under section 204 of the Transportation Act of 1920, as amended January 7, 1941, and has dismissed its claim, ruling that it did not suffer a decrease in net railway operating income while under private operation during the period of federal control.

ST. LOUIS-SAN FRANCISCO.—*Bond Interest.*—The district court in St. Louis, Mo., has approved the payment of approximately $15,000,000 in principal and interest on certain bonds of the St. Louis-San Francisco, including $7,000,000 of principal and a small amount of accrued interest on general mortgage 4 per cent and income 5 per cent bonds of the Memphis & Birmingham division. The other $8,000,000 represents interest on the prior lien and consolidated bonds of the Frisco and interest on 4 per cent refunding bonds of the Memphis & Fort Scott division.

ST. LOUIS SOUTHWESTERN.—*Reorganization.*—The District Court at St. Louis, Mo., on October 27, over-ruled an attempt to go back to 1932 to review the financial relationship of the St. Louis Southwestern and the Southern Pacific. The attempt was made by Walter E. Meyer of New York, a minority stockholder of the Cotton Belt, who attempted to show that earnings of the Cotton Belt had been impaired through ownership of 87 per cent of its common stock by the Southern Pacific. The court limited him to evidence since 1939, when the Interstate Commerce Commission conducted hearings on the reorganization plan.

ST. LOUIS SOUTHWESTERN.—*Reorganization Plan Attacked.*—The plan of reorganization of the St. Louis Southwestern was attacked by the railroad's attorneys in the United States district court at St. Louis, Mo., on October 26 on the contention that the plan did not take into consideration the railroad's present and future earning power. Earlier the court had refused a request by the anti-trust division of the Department of Justice for permission to intervene in the reorganization. Under the I. C. C.-approved plan, the Southern Pacific, which owns a majority of the stock of the St. Louis Southwestern, would lose its present stock interest but would retain control of the railroad through an exchange of bonds for new stock.

SOUTHERN PACIFIC.—*Not Required to Acquire Waco, Beaumont, Trinity & Sabine.*—In a supplementary report in Finance Docket No. 8393 the Interstate Commerce Commission has denied a motion of the Waco, Beaumont, Trinity & Sabine that the Southern Pacific be required to acquire that line. The motion was filed in an effort to make effective a condition under which approval of acquisition of control of the St. Louis Southwestern by the Southern Pacific was authorized in 1932. Under this condition the Southern Pacific undertook to acquire the applicant's line at a later date if the Commission should so direct, but the present report finds that such acquisition would not be in the public interest.

WABASH.—*Assumption of Liability.*—Authority has been granted this road by the Interstate Commerce Commission, Division 4, to assume liability as guarantor with respect to fractional parts of certain indebtedness of the Terminal Railroad Association of St. Louis, the Chicago & Western Indiana, and the Kansas City Terminal, for which its predecessor company had been liable. That part of the application which requested authority to exercise stock control, jointly with other roads, over these three terminal lines and also the Belt Railway of Chicago, was dismissed as unnecessary.

Average Prices Stocks and Bonds

	Oct. 27	Last week	Last year
Average price of 20 representative railway stocks..	29.68	29.75	29.08
Average price of 20 representative railway bonds..	68.53	68.28	64.48

Dividends Declared

Erie.—50¢, common stock and certificates of beneficial interest, payable December 10 to holders of record December 1.

Equipment and Supplies

FREIGHT CARS

THE CHILE EXPLORATION COMPANY has ordered 50 ore cars of 70 tons' capacity from the Pressed Steel Car Company.

TRADE PUBLICATION

HANDBOOK OF SPECIAL STEELS.—A revised edition of the Allegheny Ludlum Steel Corporation's Handbook of Special Steels has just been published, which incorporates in convenient size and form a large amount of pertinent information on the various grades of stainless, tool, and other special alloy steels. The handbook is adapted particularly for use by design engineers and production men and contains complete data for the proper selection, treatment and use of a wide range of special alloy steels. Finder charts and tables facilitate quick reference. Tool steels are discussed, with suggestions for selecting proper grades. The handbook also contains sections on carbon, high speed and alloy tool steel drill rods; detailed information on Nitralloy steels; stainless steels; electrical steels and carbon steels; and a Special Products section dealing with Shoe Die steel, Silcrome valve steels and special shapes. Numerous engineering reference tables are also included.

News Department continued on next left-hand page

HOW TO AVOID REPAIR PART DELAYS

PROPER compliance with the regulations of the War Production Board is the first step towards getting repair parts promptly.

Verbal Orders cannot be accepted. The W.P.B. insists that shipment be made only against written orders showing a properly certified preference rating, end use symbols and required delivery date.

Since all material purchased is on the critical list and thus comes under the jurisdiction of W.P.B., we cannot enter the order until it contains all the required information.

Furthermore, all scheduling is based on priority rating so that an order with A-1-J rating, for example, is subordinate to a higher rating.

Therefore to expedite delivery we suggest you request the highest rating to which you are entitled.

Help us speed the shipment of repair parts by conforming with the W.P.B. regulations in every detail.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO
In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

Railway Officers

EXECUTIVE

S. D. Hurst, Jr., assistant to the executive vice-president of the Atlantic Coast Line, has been promoted to assistant to the president, with headquarters as before at Wilmington, N. C.

George T. Carmichael, comptroller of the New York, New Haven & Hartford and its subsidiaries, with headquarters at New Haven, Conn., has been appointed vice-president and comptroller of the road, with the same headquarters.

James J. Grogan, assistant traffic vice-president of the Atchison, Topeka & Santa Fe., has been promoted, effective November 1, to vice-president in charge of traffic, with headquarters as before at Chicago, succeeding **Paul P. Hastings,** whose retirement on October 31 was reported in the *Railway Age* of October 24. A photograph and biography of Mr. Grogan were published in the *Railway Age* of July 4, page 43, following his promotion to assistant traffic vice-president on July 1 of this year.

John P. Laux, whose promotion to assistant to vice-president and general manager of the Lehigh Valley at Bethlehem, Pa., was reported in the *Railway Age* of October 10, was born at Pittston, Pa., on July 17, 1882, and attended Pennsylvania State College. He entered railroad service on September 10, 1898, with the Lehigh Valley and served until July 11, 1900, as crew caller and crew dispatcher at Sayre, Pa. He then served successively as machinist apprentice and air brake inspector at Sayre before going with the Southern as foreman at Knoxville, Tenn. In October, 1909, Mr. Laux returned to the Lehigh Valley as foreman at Sayre, then serving successively as general foreman at Manchester, N. Y.; assistant master mechanic at South Easton, Pa.; and master mechanic at Hazleton, Pa., Sayre, and South Easton, successively. On June 1, 1923, Mr. Laux became shop superintendent at Sayre and on February 15, 1929, he was appointed superintendent motive power at Bethlehem, being transferred to Sayre on July 1, 1938, where he remained until his recent promotion.

Julian M. Fields, whose promotion to assistant vice-president, traffic department, Atlantic Coast Line, with headquarters at Wilmington, N. C., was reported in the *Railway Age* of September 26, began his railroad career on May 4, 1916, as stenographer in the freight traffic department of the Georgia railroad at Atlanta, Ga. Mr. Fields left railroad service on April 9, 1918, to enter the United States Army, spending 18 months in overseas service during the first World War. When mustered out of military service, he re-entered the service of the Georgia railroad on August 1, 1920. Mr. Fields entered the service of the Atlantic Coast Line on September 20, 1920, as stenographer in the freight traffic department at Atlanta, becoming traveling freight agent at Atlanta on November 15, 1921, and commercial agent at Savannah on July 1, 1924. On December 19, 1932, he became Eastern freight agent at New York and on November 1, 1936, he was appointed assistant general freight agent at Savannah. Mr. Fields became manager, development service, on November 1, 1937, with headquarters at Wilmington, N. C., and on May 21, 1942, he was appointed assistant to vice-president.

FINANCIAL, LEGAL AND ACCOUNTING

James E. Wolfe, chief clerk to the assistant to the executive vice-president of the Chicago, Burlington & Quincy, has been promoted to the newly created position of supervisor of wage schedules, with headquarters as before at Chicago.

P. J. McHale, chief traveling auditor of the Missouri Pacific, has been promoted to auditor of station accounts, with headquarters at St. Louis, Mo., succeeding **H. C. Abbey,** who has been appointed auditor of freight receipts, replacing **W. H. Malcolm,** who retired on October 1.

George K. Duval, chief clerk to the auditor of freight and passenger receipts of International-Great Northern (Missouri Pacific) at Palestine, Tex., has been promoted to auditor of freight and passenger receipts, with the same headquarters, succeeding **L. W. Pryor,** who has retired.

OPERATING

J. F. Lewis, assistant superintendent of the Union Pacific at Marysville, Kan., has been promoted to acting superintendent of the Kansas division, with headquarters at Kansas City, Mo., and **R. A. Roberts** has been appointed assistant superintendent at Marysville, succeeding Mr. Lewis.

Margarito Ramirez, a former division superintendent of the National Railways of Mexico, has been appointed acting general manager of that road, with headquarters at Mexico, D. F., succeeding **General Enrique Estrada,** who has been granted a leave of absence because of illness.

E. D. Cotterell, general superintendent of the Alberta district of the Canadian Pacific, at Calgary, Alta., has been appointed acting assistant general manager of the Eastern lines, with headquarters at Toronto, Ont., succeeding **N. McMillan,** who has been granted a leave of absence due to illness.

Clyde J. Fitzpatrick, trainmaster of the Illinois Central at McComb, Miss., has been promoted to superintendent of the Springfield division, with headquarters at Clinton, Ill., succeeding **Joseph W. Hevron,** who will retire on October 31. Mr. Hevron was born at Rockport, Ind., on February 23, 1880, and entered railway service in 1895 as an agent and telegrapher of the Louisville, Evansville & St. Louis (now part of the Southern). On December 25, 1899, he went with the Illinois Central as a telegraph operator at Gilman, Ill. From 1915 to 1924 he was superintendent successively at Clinton, Ill., Fulton, Ky., Champaign, Ill., and Carbondale. From 1924 to 1929 he was general superintendent at New Orleans, La., and from 1929 to 1939 general superintendent at Chicago. When the positions of general superintendent were discontinued in 1939 he returned to Clinton as superintendent of the Springfield division.

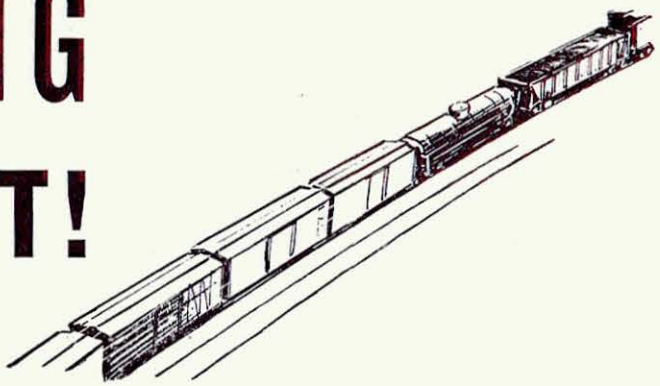
G. H. Baillie, division superintendent of the Canadian Pacific at Revelstoke, B. C., has been promoted to acting general superintendent of the Alberta district, with headquarters at Calgary, Alta., succeeding **E. D. Cotterell,** who has been appointed acting assistant general manager of the Eastern lines, with headquarters at Toronto, Ont., relieving **N. McMillan,** who has been granted a leave of absence because of illness. **A. R. Everts** superintendent at Vancouver, B. C., has been transferred to Revelstoke, replacing Mr. Baillie, and **George L. Phillips,** superintendent at Moose Jaw, Sask., has been transferred to Vancouver, succeeding Mr. Everts. **Charles Reid,** assistant superintendent at Kenora, Ont., has been promoted to superintendent at Moose Jaw, relieving Mr. Phillips, and **D. M. Dunlop,** roadmaster at Ignace, Ont., has been advanced to assistant superintendent at Kenora, replacing Mr. Reid.

Walter E. Davis, trainmaster of the Illinois Central at Louisville, Ky., has been promoted to superintendent of the Louisiana division, with headquarters at McComb, Miss., succeeding **Joseph F. Walker,** who will retire on October 31. Mr. Walker was born at Paducah, Ky., on November 21, 1877, and entered railway service on January 10, 1898, as a special machinist apprentice in the Paducah shops of the Illinois Central. In 1900 he was appointed journeyman and from January, 1901, to September, 1906, served as roundhouse foreman and machine shop foreman at Paducah. On the latter date he was promoted to general foreman of the Evansville district at Princeton, Ky., and in May, 1907, he was appointed general foreman of the Paducah shops. Mr. Walker was promoted to master mechanic at East St. Louis, Ill., in August, 1909, and in May, 1910, he was transferred to Paducah. In April, 1923, he was promoted to superintendent of the New Orleans division at Baton Rouge, La., and in September, 1931, he was appointed assistant superintendent of the Vicksburg division. Mr. Walker was advanced to superintendent of the Louisiana division at Baton Rouge in January, 1932, and his headquarters were later transferred to McComb, Miss.

E. S. McCracken, superintendent of the Canadian Pacific at Medicine Hat, Alta., has been promoted to general superintendent of the Algoma district, with headquarters at North Bay, Ont., succeeding **B. J. Quilty,** who will retire on October 31, after 45 years of service. Mr. Quilty was born on November 30, 1878, at West St. John, N. B. He entered railroad service with the Canadian Pacific on October 11, 1897, as a trainman, New Brunswick district. Subsequently, Mr. Quilty held the positions of conductor, New Brunswick

News Department continued on next left-hand page

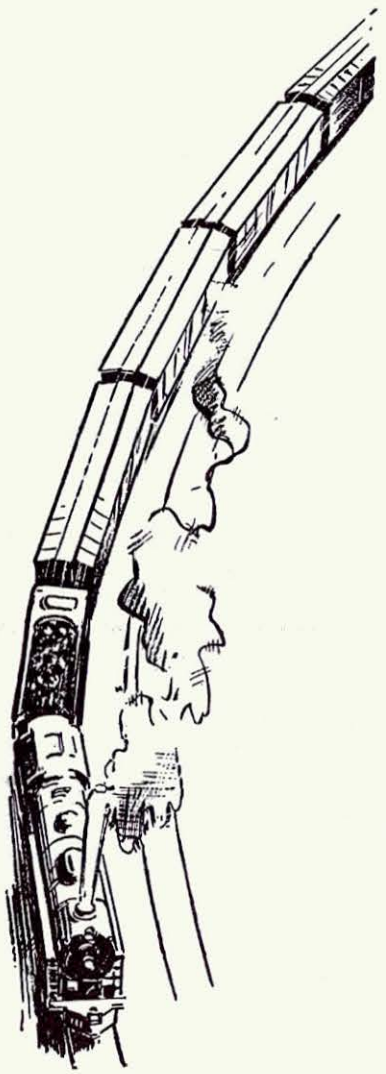
FUEL SAVING
AN ARCH HABIT!

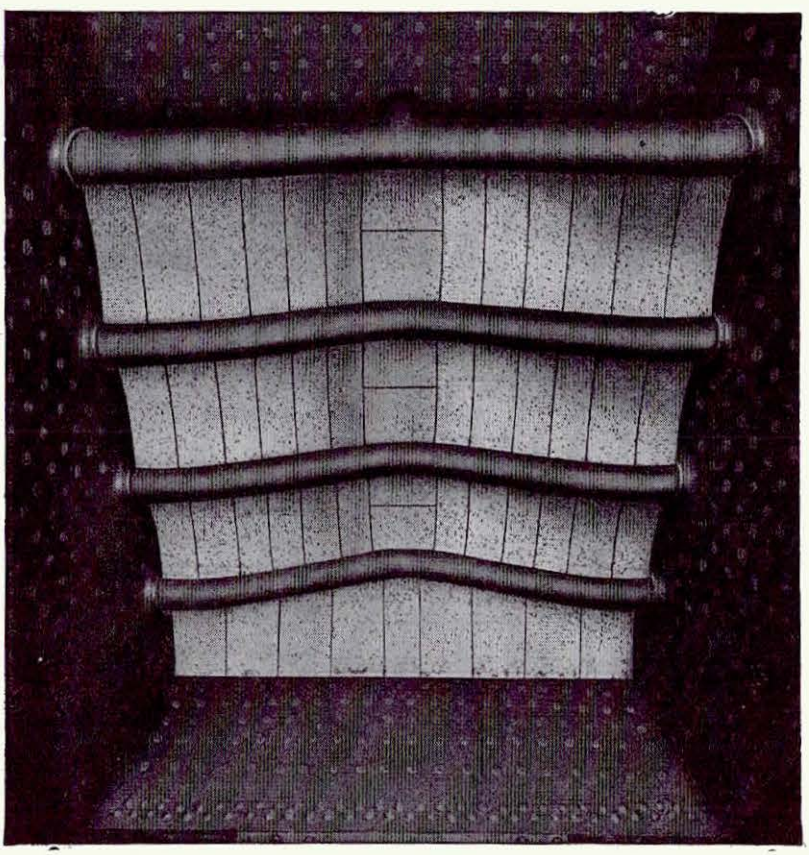


Over 32 years ago railroad men satisfied themselves as to the fuel saving of the locomotive Arch.

Since then the increase in locomotive power, higher rates of combustion and the widespread use of stokers has increased the fuel savings attributable to the Arch.

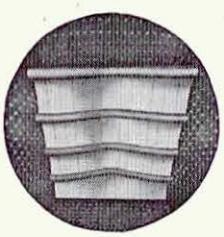
Today, when conservation of fuel is so vitally important to our war effort, don't handicap the effectiveness of the Arch by skimping on Arch brick. When your locomotives leave the roundhouse, be sure they are equipped with a *complete* Arch.





HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

district; assistant yardmaster, St. John Terminals, N. B., and trainmaster of the Brownville division, New Brunswick district. On April 26, 1920, he was promoted to assistant superintendent of the Sudbury division, Algoma district, and on October 16, 1923, was transferred to the Smith Falls division of the Quebec district. On January 1, 1926, Mr. Quilty was promoted to superintendent of the Schreiber division of the Algoma district, being transferred to the Farnham division of the Quebec district on January 1, 1930; the Trenton division of the Ontario district on November 1, 1932; the Bruce division, Toronto Terminals, with headquarters at Toronto, Ont., on July 1, 1933, and to the Sudbury division of the Algoma district in January, 1937. On February 1, 1938, Mr. Quilty was promoted to general superintendent of the Algoma district at North Bay, the position from which he will retire on October 31.

Emil H. Hanson, whose promotion to superintendent of freight transportation of the New York Central (Michigan Central),

Emil H. Hanson

with headquarters at Detroit, Mich., was reported in the *Railway Age* of October 24, was born at Grayling, Mich., on March 9, 1889, and graduated from Ferris Institute, Big Rapids, Mich., in 1907. He entered railway service on January 14, 1909, as chief clerk to the trainmaster of the Michigan Central at Grayling and on January 16, 1916, he was promoted to chief clerk to the superintendent at Detroit. Mr. Hanson was appointed general clerk to the general manager on June 22, 1920, and on September 1, 1929, he was appointed chief clerk to the general superintendent. On September 15, 1930, he was appointed chief clerk to the assistant general manager, which position he held until his recent promotion, effective October 15.

C. B. Kurtz, transportation inspector of the Panhandle & Santa Fe at Amarillo, Tex., has been promoted to trainmaster at San Angelo, Tex., succeeding **John D. Raymond,** who has been transferred to Slaton, Tex. Mr. Raymond relieves **T. B. Smith,** who has been transferred to the Atchison, Topeka & Santa Fe at Winslow, Ariz.

TRAFFIC

Harry W. Walker, traveling freight agent of the Ann Arbor at Green Bay, Wis., has been promoted to general agent at Chicago, a newly created position.

E. L. Walter, head fourth section clerk of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been promoted to the newly created position of assistant general freight agent, with the same headquarters.

L. E. Wetterau, assistant freight traffic manager of the Southern at Birmingham, Ala., has been appointed executive general agent at Birmingham, effective November 1.

J. P. Gilman, general agent of the Louisville & Nashville at Anniston, Ala., has been promoted to division freight agent at New Orleans, La., succeeding **A. G. Payne,** who retired on October 16. **W. A. Roelker,** commercial agent at Macon, Ga., has been advanced to general agent at Anniston, replacing Mr. Gilman.

A. L. Morgan, district freight agent of the Southern Pacific at San Pedro, Cal., has been transferred to Santa Ana, Cal., succeeding **L. B. Valla,** who retired on October 1, and **H. A. Hansen** has been appointed district freight agent at San Pedro, replacing Mr. Morgan. **V. L. Arenth** has been appointed district freight agent at Long Beach, Cal. **Harry Fee** has been appointed district freight agent at Salem, Ore., succeeding A. A. Mickel, deceased. **Arthur Y. Alcorn** has been appointed district freight agent at Portland, Ore.

Oswald Arthur Trudeau, district passenger agent of the Canadian National, has been promoted to general passenger agent, with headquarters as before at Montreal, Que., succeeding **Edward C. Elliott,** whose retirement was reported in the *Railway Age* of October 10. Mr. Trudeau, a native of Waterloo, Que., received his education at St. Bernardin college and Waterloo Academy. He entered railway service in February, 1906, as a clerk in the office of the auditor of passenger accounts of the Grand Trunk (now Canadian National).

Oswald Arthur Trudeau

In 1910, he became advertising clerk in the office of the district passenger agent, later being promoted to excursion clerk, a position which necessitated a wide knowledge of routes and rates. Mr. Trudeau later held the position of chief clerk of the passenger department at Montreal and of special representative in charge of large movements, including pilgrimages. On March 30, 1935, he was appointed district passenger agent, which office he maintained until his recent appointment to general passenger agent. Mr. Trudeau's activities in his new position will extend over the Eastern half of the Central region including the cities of Montreal, Ottawa, Ont., and Quebec, Que., and the lines in New England and New York State.

Frederick C. Francis, whose retirement on November 1 as manager of mail, baggage and express traffic of the Chicago, Rock Island & Pacific was reported in the *Railway Age* of October 24, was born at Prescott, Ont., on October 22, 1876, and entered railway service in 1902 with the Rock Island, serving in various clerical capacities at Chicago and St. Louis, Mo., until 1917 when he was promoted to division passenger agent at Chicago. In 1924 he was advanced to manager of mail, baggage and express traffic, which position he held until his retirement. Mr. Francis was president of the American Association of General Baggage Agents in 1937 and 1938; was chairman of the Western Baggage and Milk Traffic Committee in 1928 and 1929 and was chairman of the Tariff Rules Committee in 1927.

ENGINEERING & SIGNALING

M. H. Doughty, assistant to the chief engineer of the Delaware, Lackawanna & Western, with headquarters at Hoboken, N. J., retired on October 1.

O. G. Wilbur, field engineer of the building department of the Baltimore & Ohio, has been promoted to appraisal engineer on the staff of the chief engineer, with the same headquarters.

K. L. Clark, assistant engineer of the Chicago, Milwaukee, St. Paul & Pacific at Chicago, has been promoted to division engineer of the Hastings and Dakota division, with headquarters at Aberdeen, S. D., succeeding **W. E. Ring,** who has been transferred to the Rocky Mountain division, with headquarters at Butte, Mont., relieving **D. C. Rhynsburger,** who has been assigned to other duties.

SPECIAL

J. Hughie Campbell, press representative for the Canadian Pacific in Western Canada for the past 13 years, has been loaned to the Wartime Information Board of the Canadian Government for the duration of the war. He will be located in Washington, D. C.

OBITUARY

Henry M. Gully, assistant principal assistant engineer of the Gulf, Mobile & Ohio, with headquarters at Meridian, Miss.,

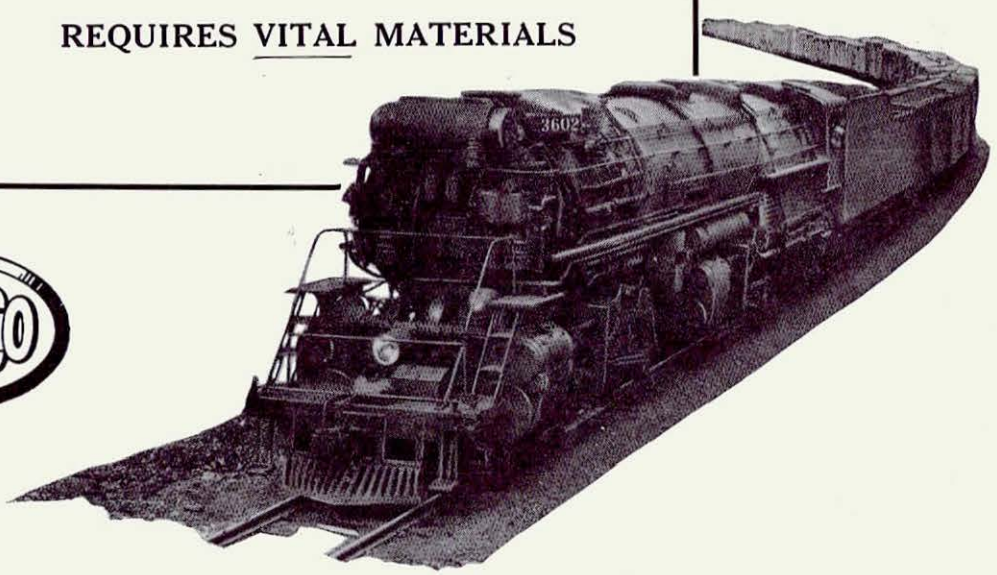
News Department continued on next left-hand page

Deserving of a **Citation**

Without fanfare, our railroads have achieved new records in the transportation of materials and men.

To maintain such a pace, it requires correct maintenance of locomotive equipment, especially vital factors such as Elesco superheaters and feedwater heating equipment.

GOOD MAINTENANCE
REQUIRES VITAL MATERIALS



ELESCO

A-1536

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE SUPERHEATER COMPANY

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Blvd., CHICAGO
• • •
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

died in a motor car accident north of Meridian on September 21.

Timothy B. Roberts, supervisor of apprentices of the Lehigh Valley, who died after a short illness on October 14, 1942, was 56 years old. He was born in Wellsboro, Pa. Mr. Roberts entered the service of the Lehigh Valley as a call boy at the age of 14. He became a machinist apprentice at Sayre in 1905, and after his apprenticeship was employed in the Sayre shops as a machinist for 11 years. In June, 1918, he was made a foreman and in August, 1924, was made a piecework inspector, continuing in that capacity until February, 1930, when he became supervisor of apprentices. Except for an interval of three years, he remained in that capacity until his death.

Jacob A. Wagner, who retired on December 31, 1940, as general manager of the Des Moines Union Railway Company, died at his home in Des Moines, Iowa, on October 20, 1942, after a prolonged illness. Mr. Wagner was born in Limestoneville, Pa., on July 19, 1864, and entered railroad service with the Chicago, Burlington & Quincy at Shenandoah, Iowa, in 1880. He was promoted successively to operator, agent and train dispatcher and on February 1, 1893, went with the Des Moines Union Railway at Des Moines as superintendent. He became general manager in 1918. Under Mr. Wagner's supervision the Iowa Transfer Railway Company, one of the first joint interchange yards to be established, was constructed in 1906 and Mr. Wagner also served as superintendent and as general manager of that company until the time of his retirement.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 Monthly Reports of Revenues and Expenses Representing 136 Class I Steam Railways
(Switching and Terminal Companies Not Included)

FOR THE MONTH OF AUGUST, 1942 AND 1941

Item	United States		Eastern District		Southern District		Western District	
	1942	1941	1942	1941	1942	1941	1942	1941
Miles of road operated at close of month	230,948	232,226	56,859	57,196	43,669	44,104	130,420	130,926
Revenues:								
Freight	$537,411,800	$410,213,057	$212,670,780	$171,187,192	$101,379,051	$78,696,825	$223,361,969	$160,329,040
Passenger	103,463,192	49,773,137	49,177,831	26,072,784	20,169,909	7,174,605	34,115,452	16,525,748
Mail	8,742,476	8,625,463	3,156,118	3,161,478	1,555,468	1,431,607	4,030,890	4,032,378
Express	7,684,026	4,391,347	2,953,303	1,758,310	1,032,398	691,421	3,698,325	1,941,616
All other operating revenues	26,505,284	20,671,004	11,951,478	10,013,349	3,244,610	2,282,676	11,309,196	8,374,979
Railway operating revenues	683,806,778	493,674,008	279,909,510	212,193,113	127,381,436	90,277,134	276,515,832	191,203,761
Expenses:								
Maintenance of way and structures	77,248,454	56,209,812	32,508,037	23,502,521	12,201,192	8,846,194	32,539,225	23,861,097
Maintenance of equipment	102,782,140	84,138,974	45,253,838	39,326,007	19,940,954	15,494,355	37,587,348	29,318,612
Traffic	9,529,713	9,144,394	3,458,663	3,307,339	1,850,087	1,756,165	4,220,963	4,080,890
Transportation—Rail line	189,827,750	149,322,576	85,265,295	68,479,944	32,237,509	24,242,297	72,324,946	56,600,335
Transportation—Water line	1,159	13,854	.....	.....	.....	.....	1,159	13,854
Miscellaneous operations	6,966,403	4,336,814	2,698,947	1,827,434	1,078,406	492,545	3,189,050	2,016,835
General	12,936,684	11,049,392	5,189,438	4,375,787	2,480,106	2,145,238	5,267,140	4,528,367
Transportation for investment—Cr.*	.....	372,537	.....	74,621	.....	50,702	.....	247,214
Railway operating expenses	399,292,303	313,843,279	174,374,218	140,744,411	69,788,254	52,926,092	155,129,831	120,172,776
Net revenue from railway operations	284,514,475	179,830,729	105,535,292	71,448,702	57,593,182	37,351,042	121,386,001	71,030,985
Railway tax accruals	132,893,623	56,756,638	47,245,103	22,349,914	34,433,591	16,031,121	51,214,929	18,375,603
Railway operating income	151,620,852	123,074,091	58,290,189	49,098,788	23,159,591	21,319,921	70,171,072	52,655,382
Equipment rents—Dr. balance	12,955,925	8,784,191	6,138,756	4,154,078	591,020	*d*529,248	6,226,149	5,159,361
Joint facility rent—Dr. balance	3,400,852	2,878,411	1,743,310	1,561,755	439,868	349,803	1,217,674	966,853
Net railway operating income	135,264,075	111,411,489	50,408,123	43,382,955	22,128,703	21,499,366	62,727,249	46,529,168
Ratio of expenses to revenues (per cent)	58.4	63.6	62.3	66.3	54.8	58.6	56.1	62.9
Depreciation included in operating expenses	23,059,161	18,260,451	11,254,809	8,019,792	3,928,120	3,650,426	7,876,232	6,590,233
Amortization of defense projects	7,683,453	26,992	2,466,672	7,995	2,146,790	18,997	3,069,991	.....
Pay roll taxes	14,891,893	11,790,846	6,445,794	5,251,907	2,586,215	1,972,281	5,859,884	4,566,658
All other taxes	‡118,001,730	44,965,792	40,799,309	17,098,007	31,847,376	14,058,840	45,355,045	13,808,945

FOR EIGHT MONTHS ENDED WITH AUGUST, 1942 AND 1941

Miles of road operated at close of month‡	231,374	232,278	56,898	57,233	43,831	44,175	130,645	130,870
Revenues:								
Freight	$3,743,659,405	$2,821,742,032	$1,542,323,481	$1,216,969,809	$735,075,901	$552,181,790	$1,466,260,023	$1,052,590,433
Passenger	587,681,025	334,547,925	281,861,230	171,983,682	112,611,250	57,224,410	193,208,545	105,339,833
Mail	69,897,852	68,878,927	25,452,203	25,520,396	12,506,545	11,813,530	31,939,104	31,545,001
Express	55,159,898	37,724,237	19,605,123	14,829,533	9,054,707	7,750,576	26,500,068	15,144,128
All other operating revenues	173,349,165	140,651,009	81,471,304	69,283,865	22,304,986	17,221,732	69,572,875	54,145,412
Railway operating revenues	4,629,747,345	3,403,544,130	1,950,713,341	1,498,587,285	891,553,389	646,192,038	1,787,480,615	1,258,764,807
Expenses:								
Maintenance of way and structures	500,722,600	374,604,734	203,442,039	151,740,731	86,899,638	66,125,255	210,380,923	156,738,748
Maintenance of equipment	785,981,982	628,226,078	353,561,327	292,818,894	150,543,064	116,745,166	281,877,591	218,662,016
Traffic	77,485,726	73,238,895	28,092,955	26,129,484	15,313,108	14,264,559	34,079,663	32,844,852
Transportation—Rail line	1,434,512,328	1,106,953,229	656,375,274	512,476,164	244,682,966	186,586,793	533,454,088	407,890,272
Transportation—Water line	21,726	3,057,478	.....	.....	.....	.....	21,726	3,057,478
Miscellaneous operations	45,013,944	29,756,834	18,223,459	12,813,608	7,287,410	4,364,226	19,503,075	12,579,000
General	103,293,385	88,733,119	41,547,167	35,000,888	19,831,444	17,256,979	41,914,774	36,475,252
Transportation for investment—Cr.*	.....	2,343,245	.....	406,029	.....	493,437	.....	1,443,779
Railway operating expenses	2,947,031,691	2,302,227,120	1,301,242,221	1,030,573,740	524,557,630	404,849,541	1,121,231,840	866,803,839
Net revenue from railway operations	1,682,715,654	1,101,317,010	649,471,120	468,013,545	366,995,759	241,342,497	666,248,775	391,960,968
Railway tax accruals	750,188,665	361,228,044	292,884,285	154,700,553	193,537,756	89,323,314	263,766,624	117,204,177
Railway operating income	932,526,989	740,088,966	356,586,835	313,312,992	173,458,003	152,019,183	402,482,151	274,756,791
Equipment rents—Dr. balance	90,567,888	66,383,272	44,635,997	31,871,550	5,309,094	1,622,185	40,622,797	32,889,537
Joint facility rent—Dr. balance	25,182,768	22,090,296	13,374,454	12,049,091	2,824,674	2,475,742	8,983,640	7,565,463
Net railway operating income	816,776,333	651,615,398	298,576,384	269,392,351	165,324,235	147,921,256	352,875,714	234,301,791
Ratio of expenses to revenues (per cent)	63.7	67.6	66.7	68.8	58.8	62.7	62.7	68.9
Depreciation included in operating expenses	161,215,125	143,652,838	73,288,291	63,065,372	31,763,188	28,931,762	56,163,646	51,655,704
Amortization of defense projects	48,716,999	55,179	16,003,708	19,638	12,804,874	35,541	19,908,417	.....
Pay roll taxes	110,672,469	85,799,844	48,634,377	38,225,228	19,555,693	14,884,935	42,482,399	32,689,681
All other taxes	†639,516,196	275,428,200	244,249,908	116,475,325	173,982,063	74,438,379	221,284,225	84,514,496

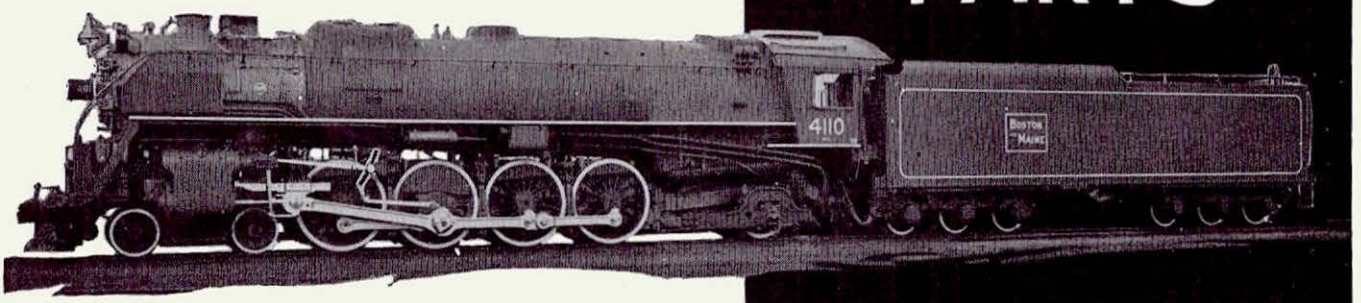
d Decrease, deficit, or other reverse items.
‡ Represents an average of the mileage reported at the close of each month within the period.
* General Account VIII. Transportation for Investment—Cr. canceled effective January 1, 1942.
‡ Includes Federal income tax, surtax and excess profits tax amounting to $94,972,331.
† Includes Federal income tax, surtax and excess profits tax amounting to $461,546,488.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

Table of Freight Operating Statistics Appears on Next Left-Hand Page

Keep 'Em Rolling

HSGI
Wear Resisting PARTS



UNDER the war time program railroads are obtaining a greater freight car mileage with fewer locomotives than in any other period in history.

It is obvious that the quality of the wearing materials is a vital factor in this achievement. It is also significant that the vast majority of modern locomotives are equipped with wearing parts made from HUNT-SPILLER *Air Furnace* GUN IRON.

Application of all the H S G I parts listed below will help to keep your power rolling up maximum revenue miles per month at a minimum cost for fuel and materials.

H S G I
Reg. U. S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings, All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION
V. W. Ellet, *President* E. J. Fuller, *Vice-Pres. & Gen. Mgr.*

383 Dorchester Ave. *Office & Works* South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER *Air Furnace* GUN IRON

Freight Operating Statistics of Large Steam Railways — Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos. & tenders	Ton-miles (thousands): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: Per cent B. O.	
New England Region:												
Boston & Albany	1942	362	214,894	266,364	56,365	6,019	55.9	435,224	177,011	65	..	24	27.0
	1941	362	162,486	176,898	15,557	3,886	66.0	236,145	93,896	63	5	18	20.9
Boston & Maine	1942	1,848	384,151	450,432	48,425	13,174	64.7	875,107	389,490	144	1	23	13.7
	1941	1,894	343,008	393,188	35,738	12,929	70.5	748,987	309,600	128	3	37	22.0
N. Y., New H. & Hartf.†	1942	1,821	528,138	671,082	67,498	18,628	65.5	1,195,104	510,909	218	..	36	14.2
	1941	1,826	442,504	553,311	41,029	16,728	68.6	937,901	380,421	201	..	54	23.6
Great Lakes Region:												
Delaware & Hudson	1942	849	363,240	460,937	46,574	13,134	62.6	970,566	497,541	156	19	49	21.9
	1941	849	323,056	382,531	44,944	12,303	65.8	814,892	394,601	126	35	72	30.9
Del., Lack. & Western	1942	982	375,245	434,059	60,844	15,732	64.3	1,074,269	491,731	133	20	39	20.3
	1941	983	396,496	451,927	64,384	16,174	73.0	956,598	428,235	144	3	53	26.5
Erie	1942	2,243	896,642	955,236	57,177	39,994	65.7	2,655,627	1,134,925	291	31	82	20.3
	1941	2,257	885,586	936,453	58,640	40,376	69.0	2,458,576	1,003,364	248	27	144	34.4
Grand Trunk Western	1942	1,026	304,204	309,839	2,099	9,283	62.1	614,626	251,901	71	1	11	13.3
	1941	1,023	264,124	268,295	2,139	8,347	65.3	513,676	197,580	73	3	17	18.3
Lehigh Valley	1942	1,249	514,866	575,255	104,269	21,325	61.1	1,520,881	716,017	142	..	15	9.6
	1941	1,251	410,763	449,835	71,059	17,238	69.7	1,094,533	506,224	132	11	40	21.9
New York Central	1942	10,496	3,809,417	4,140,053	253,421	142,012	59.4	10,324,744	4,684,778	1,179	7	209	15.0
	1941	10,519	3,273,587	3,489,810	229,761	120,229	63.4	8,128,628	3,637,428	1,008	107	269	19.4
New York, Chi. & St. L.	1942	1,657	897,389	914,592	11,172	32,833	61.1	2,273,455	984,811	166	..	16	8.8
	1941	1,672	659,978	673,627	8,967	25,669	68.1	1,566,272	650,771	154	2	11	6.6
Pere Marquette	1942	2,020	399,648	410,874	7,840	11,879	62.8	817,542	364,308	133	4	28	17.0
	1941	2,068	383,455	399,154	8,149	11,095	67.1	705,275	305,176	129	..	24	15.7
Pitts. & Lake Erie	1942	233	105,769	108,812	56	4,416	63.0	389,151	229,996	46	3	7	12.5
	1941	232	108,952	112,976	94	4,661	63.9	399,987	234,480	45	..	15	25.0
Wabash	1942	2,381	857,284	883,654	10,980	29,176	61.9	2,000,280	878,933	175	10	41	18.1
	1941	2,397	643,450	656,397	13,194	22,466	70.5	1,315,360	526,270	141	21	97	37.5
Central Eastern Region:												
Baltimore & Ohio	1942	6,213	2,526,074	3,177,358	386,131	84,147	61.5	6,125,645	2,924,961	913	15	217	19.0
	1941	6,245	2,039,445	2,562,087	273,459	69,387	64.1	4,809,972	2,277,024	843	82	216	18.9
Central of New Jersey†	1942	661	274,678	317,717	64,468	9,026	58.4	690,096	346,543	119	9	20	13.5
	1941	675	225,160	252,335	44,416	7,338	63.2	516,730	259,495	86	9	47	33.1
Chicago & Eastern Ill.	1942	913	212,189	216,411	3,962	6,428	62.3	448,549	206,378	57	..	13	18.6
	1941	925	184,011	184,887	3,208	5,289	69.9	321,776	143,894	58	10	23	25.3
Elgin, Joliet & Eastern	1942	392	146,087	148,209	1,670	4,003	63.2	317,322	167,579	67	..	13	16.3
	1941	390	134,143	135,586	1,569	3,797	61.3	295,352	141,246	66	1	10	13.0
Long Island	1942	374	33,208	34,623	19,000	404	53.6	31,386	12,693	46	1	2	4.1
	1941	375	30,442	31,924	19,898	335	51.3	25,537	9,509	39	3	6	12.5
Pennsylvania System	1942	9,952	4,878,250	5,799,928	774,110	185,435	61.1	13,745,191	6,614,116	2,010	7	171	7.8
	1941	9,960	4,132,979	4,910,187	603,331	162,910	64.2	11,330,769	5,414,009	1,711	85	339	15.9
Reading	1942	1,423	626,695	698,911	90,285	19,527	61.6	1,517,637	802,483	277	11	58	11.1
	1941	1,430	536,340	594,555	73,452	16,950	64.9	1,217,743	629,289	255	14	66	19.7
Pocahontas Region:												
Chesapeake & Ohio	1942	3,036	1,136,957	1,227,052	62,026	51,401	55.9	4,464,491	2,483,504	426	3	72	14.4
	1941	3,053	1,062,725	1,126,479	52,255	51,716	57.4	4,389,384	2,440,261	397	22	71	14.5
Norfolk & Western	1942	2,137	816,064	863,548	54,340	35,762	56.6	3,111,091	1,669,855	299	12	26	7.7
	1941	2,167	805,949	848,843	47,980	38,562	58.6	3,262,722	1,771,643	308	15	19	5.6
Southern Region:												
Atlantic Coast Line	1942	4,984	887,454	923,004	13,204	22,567	62.7	1,534,188	675,701	336	18	27	7.1
	1941	5,050	660,440	671,826	9,801	16,138	66.0	998,975	416,062	271	30	39	11.5
Central of Georgia†	1942	1,783	299,186	303,493	4,933	6,625	67.6	431,150	192,996	108	..	14	11.5
	1941	1,831	303,775	306,945	5,506	7,111	72.1	416,210	178,019	97	..	20	17.1
Gulf, Mobile & Ohio	1942	1,959	386,333	482,861	6,290	13,161	63.8	888,310	408,437	113	..	8	6.6
	1941	1,962	283,865	329,484	3,090	9,513	71.0	573,804	257,101	93	2	12	11.2
Illinois Central (incl. Yazoo & Miss. Vy.)	1942	6,408	1,874,952	1,890,575	40,275	65,337	57.6	4,793,478	2,127,344	599	6	71	10.5
	1941	6,521	1,577,872	1,584,406	27,953	50,132	63.1	3,347,070	1,466,501	571	33	126	17.3
Louisville & Nashville	1942	4,741	1,600,372	1,747,715	46,636	39,020	59.4	2,926,432	1,464,498	432	1	56	11.5
	1941	4,794	1,379,095	1,487,498	39,041	35,851	61.6	2,563,765	1,273,964	327	74	57	12.4
Seaboard Air Line*	1942	4,232	883,907	985,179	10,978	22,456	65.4	1,537,099	708,994	285	..	36	11.2
	1941	4,298	684,281	721,358	7,203	17,266	65.2	1,097,967	473,632	255	3	46	15.1
Southern	1942	6,469	2,054,283	2,096,068	31,356	45,045	64.7	2,964,274	1,305,036	591	..	86	12.7
	1941	6,521	1,788,457	1,819,776	27,533	41,369	67.2	2,487,585	1,055,804	534	1	117	17.9
Northwestern Region:												
Chi. & North Western†	1942	8,234	1,080,673	1,130,356	22,965	34,586	62.1	2,419,315	1,072,166	350	47	143	26.5
	1941	8,305	1,070,858	1,107,668	24,245	35,446	64.0	2,315,577	921,596	351	14	199	35.3
Chicago Great Western	1942	1,447	280,893	286,269	4,377	8,728	65.7	577,376	242,902	72	3	11	12.8
	1941	1,447	284,414	286,954	5,229	9,157	66.6	568,937	224,706	69	4	11	13.1
Chi., Milw., St. P. & Pac.†	1942	10,813	1,538,831	1,609,191	65,671	48,801	62.3	3,431,138	1,555,446	477	54	87	14.1
	1941	10,846	1,573,937	1,642,351	66,017	50,184	64.0	3,327,731	1,459,720	477	20	115	18.8
Chi., St. P., Minneap. & Om.	1942	1,618	226,122	245,753	10,591	5,894	69.0	386,614	174,145	106	16	12	9.0
	1941	1,618	238,820	253,412	11,899	6,265	68.8	389,460	164,222	108	10	13	9.9
Duluth, Missabe & I. R.	1942	544	206,026	206,983	1,620	10,627	50.7	950,158	578,833	54	1	2	3.5
	1941	542	154,264	155,189	1,695	8,821	51.3	784,555	480,060	49	..	4	7.5
Great Northern	1942	8,021	1,216,502	1,214,432	36,229	47,448	63.1	3,598,578	1,800,928	395	19	75	15.3
	1941	7,977	1,244,056	1,242,974	41,002	44,424	56.9	3,412,413	1,559,715	387	15	88	18.0
Min., St. P. & S. St. M.†	1942	4,258	472,178	482,174	10,149	12,684	62.1	893,373	412,239	138	5	4	2.7
	1941	4,251	492,197	503,341	7,426	13,498	65.0	889,766	400,138	129	..	7	5.1
Northern Pacific	1942	6.593	931,395	996,040	73,985	37,329	71.0	2,426,343	1,166,387	344	35	55	12.7
	1941	6,414	966,487	1,032,463	67,536	35,869	66.4	2,318,862	1,022,337	340	13	67	16.0
Central Western Region:												
Alton	1942	915	312,001	343,785	1,384	8,377	66.5	562,661	234,986	73	..	4	5.2
	1941	915	229,835	252,054	1,108	5,722	64.4	354,574	141,799	58	5	13	17.1
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1942	13,362	3,199,704	3,476,402	201,943	97,828	61.1	6,956,934	2,714,818	820	9	105	11.2
	1941	13,431	2,688,488	2,966,963	165,612	81,264	62.7	5,394,745	1,961,083	737	43	95	10.9
Chi., Burl. & Quincy	1942	8,888	1,475,393	1,549,704	58,306	49,253	63.6	3,421,572	1,582,488	437	2	65	12.9
	1941	8,923	1,452,089	1,515,852	55,973	45,737	60.4	3,095,238	1,284,103	442	11	89	16.4
Chi., Rock I. & Pac.†	1942	7,892	1,461,588	1,539,877	22,023	39,242	61.5	2,753,489	1,176,055	380	7	91	19.0
	1941	7,911	1,245,491	1,274,436	9,516	33,583	63.1	2,150,361	874,014	342	16	135	27.4
Denver & R. G. Wn.†	1942	2,405	491,808	572,449	87,817	16,453	70.0	1,063,959	488,596	184	9	9	4.5
	1941	2,547	403,580	460,146	62,420	11,935	66.9	770,356	326,657	154	6	24	13.0
Southern Pacific—Pac. Lines	1942	8,326	2,380,695	2,669,475	387,862	92,032	65.3	6,174,458	2,545,178	848	7	90	9.5
	1941	8,490	2,066,347	2,301,710	330,265	77,417	64.1	5,064,070	1,937,380	727	8	95	11.4
Union Pacific	1942	9,852	2,903,385	3,039,703	223,180	102,279	65.5	6,718,067	2,826,493	796	6	91	10.2
	1941	9,872	2,971,784	3,093,506	181,782	90,207	63.3	5,752,630	2,162,970	733	14	96	11.4
Southwestern Region:												
Mo.-Kans.-Texas Lines	1942	3,281	618,984	632,512	9,766	17,520	62.0	1,137,618	466,903	138	..	31	18.3
	1941	3,281	461,592	466,056	7,630	12,432	65.8	755,972	295,747	86	..	94	52.2
Missouri Pacific†	1942	7,117	1,946,555	2,013,081	42,283	62,359	61.0	4,390,247	1,954,985	499	4	54	9.7
	1941	7,110	1,330,016	1,365,285	27,701	41,519	66.1	2,657,676	1,138,118	429	10	61	12.2
Texas & Pacific	1942	1,887	392,155	392,155	4,107	12,203	62.2	844,663	330,782	105	8	35	23.6
	1941	1,891	296,527	296,527	2,381	10,267	69.2	620,112	242,874	82	30	74	39.8
St. Louis-San Francisco†	1942	4,640	1,001,107	1,065,664	22,868	23,913	59.3	1,680,620	709,035	308	..	32	9.4
	1941	4,730	802,753	824,040	15,091	19,040	63.9	1,223,906	504,934	276	13	33	10.2
St. Louis-San Fran. & Texas	1942	159	35,489	37,080	81	541	59.5	36,647	14,748	11	..	..	...
	1941	159	29,042	29,752	52	475	61.7	32,143	11,912	10	3	1	7.1
St. Louis Southw. Lines†	1942	1,600	506,840	517,613	6,564	15,935	61.5	1,061,477	432,308	109	2	15	11.9
	1941	1,600	330,257	334,908	4,304	10,647	76.4	599,697	260,413	85	12	25	20.5
Texas & New Orleans	1942	4,392	1,046,585	1,053,799	15,435	28,373	60.6	1,957,735	824,261	242	2	18	6.9
	1941	4,415	766,376	766,564	12,029	20,685	68.2	1,318,603	564,272	230	12	23	8.7

* Report of receivers.
† Report of trustee or trustees.

for the Month of August 1942, Compared with August 1941

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl. locos and tenders	G.t.m. per train-mi. excl. locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:														
Boston & Albany	1942	397	6,448	6,845	0.3	32,380	2,035	828	29.4	841	51.2	15,774	135	124.0
	1941	656	5,314	5,970	1.4	24,826	1,468	584	24.2	492	30.9	8,367	146	78.1
Boston & Maine	1942	3,369	9,796	13,165	2.5	34,298	2,288	1,019	29.6	1,005	52.5	6,799	89	100.3
	1941	3,361	10,563	13,924	2.7	30,490	2,190	905	23.9	714	42.3	5,273	88	88.7
N. Y., New H. & Hartf.†	1942	4,717	18,962	23,679	2.3	32,212	2,307	986	27.4	709	39.5	9,050	92	100.5
	1941	3,821	18,424	22,245	2.8	30,224	2,147	871	22.7	549	35.1	6,721	93	82.1
Great Lakes Region:														
Delaware & Hudson	1942	7,026	4,543	11,569	4.5	42,911	2,688	1,378	37.9	1,356	57.2	18,904	95	76.0
	1941	5,532	5,228	10,760	4.9	39,510	2,541	1,231	32.1	1,123	53.2	14,993	98	61.1
Del., Lack. & Western	1942	8,261	10,016	18,277	2.5	46,086	2,892	1,324	31.3	889	44.3	16,153	105	87.3
	1941	7,172	10,716	17,888	3.6	41,249	2,440	1,092	26.5	792	41.0	14,053	114	85.7
Erie	1942	12,151	21,450	33,601	2.3	49,599	2,977	1,272	28.4	1,048	56.2	16,322	85	87.9
	1941	10,931	22,175	33,106	2.5	48,576	2,801	1,143	24.9	966	56.2	14,341	86	82.9
Grand Trunk Western	1942	3,238	6,730	9,968	2.7	44,167	2,038	835	27.1	817	48.5	7,920	75	133.7
	1941	4,352	7,889	12,241	5.4	36,894	1,959	753	23.7	521	33.7	6,230	80	103.6
Lehigh Valley	1942	8,699	20,906	29,605	1.7	48,368	3,045	1,434	33.6	806	39.2	18,493	102	146.9
	1941	6,503	13,933	20,436	1.0	49,184	2,718	1,257	29.4	792	38.7	13,053	98	98.2
New York Central	1942	61,099	79,414	140,513	3.5	45,590	2,745	1,246	33.0	1,056	53.9	14,398	86	111.9
	1941	61,709	80,082	141,791	5.9	41,256	2,508	1,122	30.3	831	43.3	11,155	91	97.6
New York, Chi. & St. L.	1942	5,538	12,488	18,026	1.7	47,823	2,540	1,100	30.0	1,689	92.1	19,172	78	172.8
	1941	4,992	11,251	16,243	2.4	43,985	2,378	988	25.4	1,279	74.1	12,555	79	141.1
Pere Marquette	1942	5,079	6,269	11,348	3.4	36,321	2,058	917	30.7	978	50.7	5,818	83	90.5
	1941	6,438	8,017	14,455	2.3	31,728	1,849	800	27.5	710	38.4	4,760	84	93.5
Pitts. & Lake Erie	1942	5,052	7,214	12,266	7.9	50,007	3,685	2,178	52.1	583	17.8	31,842	74	67.6
	1941	6,348	9,393	15,741	8.7	48,104	3,680	2,157	50.3	461	14.3	32,603	76	67.2
Wabash	1942	9,846	14,566	24,412	1.1	45,659	2,371	1,042	30.1	1,156	62.0	11,908	95	134.3
	1941	8,424	11,865	20,289	1.2	40,829	2,063	826	23.4	798	48.3	7,082	99	87.6
Central Eastern Region:														
Baltimore & Ohio	1942	44,821	46,082	90,903	2.0	33,050	2,472	1,180	34.8	1,047	49.0	15,186	129	104.8
	1941	44,592	41,256	85,848	2.8	32,354	2,398	1,135	32.8	881	41.9	11,762	128	84.7
Central of New Jersey†	1942	7,719	18,777	26,496	1.2	31,120	2,571	1,291	38.4	422	18.8	16,912	113	108.9
	1941	4,804	16,321	21,125	3.0	29,724	2,367	1,189	35.4	404	18.1	12,401	122	86.5
Chicago & Eastern Ill.	1942	1,931	3,739	5,670	4.3	35,591	2,163	996	32.1	1,163	58.2	7,292	104	106.5
	1941	2,502	3,820	6,322	4.7	31,922	1,760	787	27.2	748	39.3	5,018	106	70.5
Elgin, Joliet & Eastern	1942	8,512	6,803	15,315	3.6	18,335	2,228	1,176	41.9	359	13.6	13,790	116	88.0
	1941	9,844	7,767	17,611	3.3	17,891	2,256	1,079	37.2	258	11.3	11,683	107	84.9
Long Island	1942	22	3,782	3,804	0.5	7,406	957	387	31.4	106	6.3	1,095	270	48.2
	1941	64	3,925	3,989	0.8	5,906	856	319	28.4	78	5.4	818	272	49.9
Pennsylvania System	1942	142,765	103,061	245,826	3.2	39,254	2,891	1,391	35.7	860	39.5	21,439	101	105.5
	1941	145,331	93,420	238,751	8.1	38,908	2,819	1,347	33.2	729	34.2	17,535	102	91.1
Reading	1942	17,417	19,026	36,443	4.8	30,492	2,428	1,284	41.1	707	28.0	18,192	112	88.5
	1941	15,698	19,872	35,570	7.8	29,440	2,278	1,177	37.1	574	23.8	14,196	123	75.0
Pocahontas Region:														
Chesapeake & Ohio	1942	37,322	15,668	52,990	1.1	58,412	4,005	2,228	48.3	1,488	55.1	26,388	66	91.2
	1941	39,404	15,599	55,003	1.2	60,528	4,173	2,320	47.2	1,426	52.6	25,784	63	85.1
Norfolk & Western	1942	32,346	6,917	39,263	2.0	61,078	3,878	2,082	46.7	1,371	51.9	25,206	83	95.4
	1941	30,231	6,676	36,907	2.1	63,994	4,113	2,233	45.9	1,514	56.2	26,373	77	91.8
Southern Region:														
Atlantic Coast Line	1942	10,558	14,229	24,787	3.3	29,223	1,734	764	29.9	904	48.2	4,373	105	83.9
	1941	10,635	9,228	19,863	8.7	25,948	1,518	632	25.8	699	41.1	2,658	103	70.1
Central of Georgia†	1942	3,020	4,989	8,009	1.2	26,294	1,454	651	29.1	791	40.2	3,492	112	89.0
	1941	3,292	6,045	9,337	0.8	25,839	1,377	589	25.0	633	35.1	3,136	113	93.5
Gulf, Mobile & Ohio	1942	3,325	7,010	10,335	0.7	39,360	2,309	1,061	31.0	1,226	61.9	6,726	103	138.3
	1941	2,757	5,391	8,148	2.2	36,620	2,029	809	27.0	1,029	53.6	4,227	102	105.3
Illinois Central (incl. Yazoo & Miss. Vy.)	1942	23,337	30,217	53,554	1.3	41,007	2,598	1,153	32.6	1,283	68.4	10,709	101	97.9
	1941	24,634	23,363	47,997	1.1	34,688	2,155	944	29.3	979	53.0	7,254	111	74.7
Louisville & Nashville	1942	35,539	18,562	54,101	1.7	27,769	1,829	915	37.5	882	39.6	9,965	117	126.2
	1941	33,291	13,629	46,920	2.9	29,273	1,862	925	35.5	908	41.5	8,572	110	114.2
Seaboard Air Line*	1942	9,116	15,534	24,650	1.5	27,971	1,777	820	31.6	932	45.1	5,404	114	110.5
	1941	9,523	9,993	19,516	2.2	28,165	1,631	704	27.4	794	44.4	3,555	115	86.1
Southern	1942	20,066	27,705	47,771	1.9	24,327	1,459	642	29.0	876	46.7	6,508	135	107.0
	1941	18,702	23,555	42,257	4.8	23,766	1,404	596	25.5	814	47.5	5,223	133	95.7
Northwestern Region:														
Chi. & North Western†	1942	26,521	25,198	51,719	4.4	34,929	2,316	1,026	31.0	682	35.4	4,200	103	74.8
	1941	28,747	27,203	55,950	6.0	32,846	2,235	890	26.0	552	33.2	3,580	107	70.1
Chicago Great Western	1942	1,722	4,198	5,920	1.3	37,332	2,060	867	27.8	1,372	75.1	5,415	107	114.3
	1941	1,761	5,090	6,851	1.4	37,139	2,005	792	24.5	1,083	66.2	5,009	103	121.8
Chi., Milw., St. P. & Pac.†	1942	31,510	24,130	55,640	1.2	36,078	2,245	1,018	31.9	926	46.6	4,640	105	95.8
	1941	35,377	25,845	61,222	1.3	33,990	2,128	933	29.1	753	40.4	4,341	105	99.4
Chi., St. P., Minneap. & Om.	1942	1,616	6,871	8,487	5.8	23,261	1,755	791	29.5	674	33.0	3,472	97	65.4
	1941	1,770	7,806	9,576	6.8	21,770	1,671	705	26.2	555	30.8	3,274	96	70.1
Duluth, Missabe & I. R.	1942	13,230	453	13,683	2.8	78,982	4,728	2,881	54.5	1,361	49.3	34,324	56	139.0
	1941	12,926	413	13,339	1.0	86,643	5,223	3,196	54.4	1,163	41.6	28,572	57	112.0
Great Northern	1942	27,742	22,711	50,453	2.0	46,137	2,973	1,488	38.0	1,229	51.3	7,243	81	89.0
	1941	28,086	23,674	51,760	3.0	42,043	2,755	1,259	35.1	1,080	54.1	6,307	85	89.8
Min., St. P. & S. St. M.†	1942	9,294	5,719	15,013	3.7	32,725	1,897	876	32.5	890	44.1	3,123	86	116.0
	1941	9,856	6,676	16,532	2.5	30,628	1,821	819	29.6	789	41.0	3,036	85	125.8
Northern Pacific	1942	22,817	10,719	33,536	4.0	41,224	2,615	1,257	31.2	1,086	49.0	5,707	114	86.6
	1941	24,400	11,920	36,320	5.2	38,896	2,411	1,063	28.5	946	50.0	5,141	114	91.8
Central Western Region:														
Alton	1942	1,108	6,603	7,711	5.3	41,827	1,815	758	28.1	1,013	54.3	8,284	117	150.9
	1941	974	6,084	7,058	3.9	37,230	1,554	622	24.8	645	40.4	4,999	129	112.1
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1942	60,315	31,335	91,650	3.7	39,600	2,183	852	27.8	932	55.0	6,554	111	134.0
	1941	59,197	21,036	80,233	4.8	40,124	2,011	731	24.1	768	50.8	4,710	109	121.1
Chi., Burl. & Quincy	1942	21,317	20,145	41,462	3.1	38,738	2,333	1,079	32.1	1,218	59.6	5,743	95	107.3
	1941	20,169	23,506	43,675	2.2	36,606	2,141	888	28.1	894	52.7	4,642	98	99.6
Chi., Rock I. & Pac.†	1942	16,352	17,172	33,524	4.1	34,535	1,892	808	30.0	1,153	62.6	4,807	102	112.1
	1941	15,526	15,977	31,503	4.0	32,363	1,731	703	26.0	895	54.5	3,564	101	89.8
Denver & R. G. Wn.†	1942	8,692	8,503	17,195	3.2	33,040	2,174	998	29.7	931	44.8	6,553	155	112.7
	1941	9,083	6,979	16,062	3.0	32,195	1,917	813	27.4	675	36.8	4,137	147	97.2
Southern Pacific—Pac. Lines	1942	28,633	49,235	77,868	2.3	34,120	2,610	1,076	27.7	1,103	61.1	9,861	100	111.6
	1941	27,764	40,477	68,241	2.6	35,220	2,472	946	25.0	940	58.6	7,361	98	107.4
Union Pacific	1942	34,562	37,506	72,068	4.1	43,497	2,335	982	27.6	1,253	69.3	9,255	113	122.6
	1941	33,755	34,380	68,135	5.5	42,471	1,955	735	24.0	1,071	70.5	7,068	115	130.1
Southwestern Region:														
Mo.-Kans.-Texas Lines	1942	4,136	7,983	12,119	4.5	33,427	1,842	756	26.6	1,270	76.9	4,590	79	127.0
	1941	4,848	5,150	9,998	13.8	32,268	1,643	643	23.8	903	57.7	2,908	76	91.3
Missouri Pacific†	1942	14,136	33,591	47,727	1.3	35,521	2,266	1,009	31.4	1,329	69.5	8,861	101	125.5
	1941	13,686	24,196	37,882	1.2	36,116	2,011	861	27.4	939	51.8	5,164	105	96.9
Texas & Pacific	1942	2,942	5,910	8,852	1.2	39,814	2,180	854	27.1	1,241	73.6	5,655	87	89.8
	1941	2,163	5,047	7,210	2.0	43,596	2,092	819	23.7	1,080	65.9	4,143	79	55.6
St. Louis-San Francisco†	1942	11,915	9,216	21,131	2.9	33,010	1,688	712	29.7	1,065	60.6	4,929	114	108.2
	1941	11,985	7,390	19,375	3.2	31,373	1,532	632	26.5	801	47.3	3,444	111	89.0
St. Louis-San Fran. & Texas	1942	....	271	271	9.2	20,462	1,041	419	27.3	1,395	86.0	2,992	127	113.2
	1941	....	322	322	3.1	23,652	1,107	410	25.1	958	61.9	2,417	116	69.8
St. Louis Southw. Lines†	1942	2,199	5,779	7,978	0.8	35,918	2,107	858	27.1	1,713	102.7	8,716	75	139.3
	1941	1,669	3,526	5,195	1.4	37,156	1,818	790	24.5	1,660	88.8	5,250	76	95.5
Texas & New Orleans	1942	4,569	18,946	23,515	1.5	33,054	1,886	794	29.1	1,114	63.3	6,054	79	136.7
	1941	4,649	13,102	17,751	3.1	33,831	1,736	743	27.3	1,073	57.7	4,123	79	100.2

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

FOR SALE

178-55-ton all steel, self-clearing double Hopper cars, built 1921-22; with A-B Brakes, 1880 cubical feet capacity; with KD-1012 brakes, 1683 feet capacity.
ALL HAVE FULL "U" CAST STEEL TRUCK FRAMES.
All cars now in service
Prices upon request
TERMS: Cash with purchase.

DELIVERY CAN COMMENCE IMMEDIATELY AND BE COMPLETED IN ABOUT 60 DAYS — AND VERY POSSIBLY SOONER

Some $30,000 NEW REPAIR MATERIALS also available which you may wish to have inspected at the same time.
TIME and EXPEDITION ESSENTIAL and DESIRABLE.

Yours for Victory,
IRON & STEEL PRODUCTS, INC.
37 years' experience
13486 S. Brainard Ave., Chicago, Illinois
"ANYTHING containing IRON or STEEL"

GET TOGETHER DEPARTMENT

EDUCATIONAL

Educational Services for RAILROAD MEN

Maintenance of Way—
Mechanical—
Signal—
Operating—
Engineers and Firemen—
All Supervisors—
The Railway Educational Bureau
Omaha, Nebraska

FOR SALE

RAILROAD SCALES, CRANES, etc.
One-BUDA 80 ton railroad scale, 46 ft.; One Fairbanks-Morse type E 150 ton railroad scale, 50 ft.; one 15 ton Brownhoist locomotive crane. Also several overhead electric traveling cranes; railroad steam locomotives; relaying rails; spikes and bolts. Write for complete information.
SONKEN-GALAMBA CORP.
108 N. 2d St., Kansas City, Kans.

WANTED

Assistant Manager for service department also Service Engineer for equipment of rail supply company. Electrical experience essential. Training program will provide experience in company's equipment. Excellent future opportunities, including sales. Give full details past experience. Address Box 587, RAILWAY AGE, 30 Church Street, New York, N. Y.

More money can be obtained now selling whole than from scrapping!
Also, present high market prices will reduce book losses quite appreciably!

WANTED

CARS: Freight & Passenger
LOCOMOTIVES: Steam, Diesel or Electric
CAR PARTS: Used or New
RAILS: Relaying
CRANES & SHOP EQUIPMENT.
13486 S. Brainard Ave., Chicago, Illinois
IRON & STEEL PRODUCTS, INC.
13486 S. Brainard Ave., Chicago, Illinois
37 years' experience
"ANYTHING containing IRON or STEEL"

FOR SALE

Bettendorf Company's Entire Stock Purchased By Us—
NEW CAR PARTS:
Truck Side Frames
Bolsters
Center Sill Ends
Draft Lugs
Center Sill Filler and
Center Plate Supports
Journal Bearing Wedges
Journal Box Lids
Spring Planks
Spring Plank Plates
Spring Plank Dies
Etc.
Write for detailed list or send us inquiries to cover your requirements.
IRON & STEEL PRODUCTS, INC.
37 years' experience
13486 S. Brainard Ave., Chicago, Ill.
"ANYTHING containing IRON or STEEL"

WHEEL LATHE

36" Niles, No. 5
(center driven)
for turning wheels mounted on axles
IRON & STEEL PRODUCTS, INC.
13486 S. Brainard Ave.
Chicago, Illinois
"ANYTHING containing IRON or STEEL"

Available Immediate Delivery

FROM OUR WAREHOUSE

100—General Electric Streetcar Motors, model 5GE-207H51, 140 horsepower each, 600-1200 volts D.C. with grids.

50—Westinghouse 2-cylinder air compressors, style D3K-38CFM, at 170 r.p.m. direct connected to 8 horsepower direct current motors.

50—Dynamotors, General Electric, types CDM-14 form A and CDM-13 form A and CDM-12 form A—all 600-1200 volts D.C.

50—Controllers—Sprague—General Electric Multiple Unit System type M.

30—Automatic Control Systems.

30—Motor Generators—600 volts to 35 volts, type XX22, style 2T252.

60—Exide Batteries, 8 cells, 16 volts.

60—Golden Glow No. T128 Headlights.

25—Pantographs, sliding type.

Electrical and Mechanical Accessories

ALL SUBJECT TO PRIOR SALE

HYMAN-MICHAELS COMPANY
United Commercial Co. Div.
2200 JERROLD AVE. **SAN FRANCISCO, CALIF.**

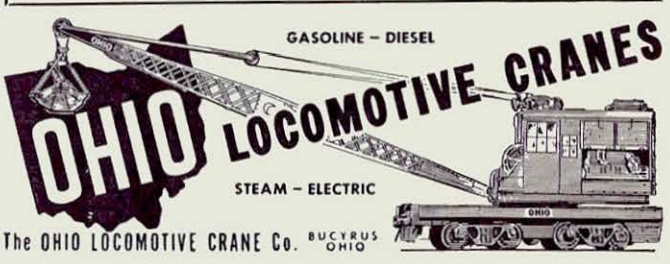
WANT TO PURCHASE

4 inch O. D. boiler tubes; steel pipe of all sizes, Valves; Fittings; Industrial plants; mills; railroads; trackage; etc.
WRITE, WIRE OR PHONE
SONKEN-GALAMBA CORP.
108 N. 2d St. Kansas City, Kans.
We buy and sell.
Get our quotations.

AT BIG SAVINGS

Locomotives, railroad equipment and accessories; machinery; boilers; motors; engines and other equipment. Write, wire or phone for prices.

Sonken-Galamba Corp.
108 N. 2nd St. Kansas City, Kans.



SPEED OPERATIONS CUT COSTS WITH Carey FIBROUS CAR CEMENT

Safeguard car frames from ruinous attack of rust and corrosion. Cut down repair costs.

The application of Carey Fibrous Car Cement assures longer life to freight cars—prevents the destructive effects of moisture, weak acid, alkali, weather and mechanical wear. Quickly and easily applied, dries fast and provides maximum adhesion. Endorsed by leading railroad and car manufacturing companies. Write Dept. 40 for details, samples and prices.

THE PHILIP CAREY MANUFACTURING COMPANY
DEPENDABLE PRODUCTS SINCE 1873
LOCKLAND • • CINCINNATI, OHIO

From the Early Period
of the Telegraph to the present
remarkable development in the field of Electricity
KERITE
has been continuously demonstrating the
fact that it is the most reliable and
permanent insulation known
THE KERITE INSULATED WIRE & CABLE COMPANY INC
NEW YORK CHICAGO SAN FRANCISCO

FOR SALE

USED RAILROAD EQUIPMENT

1—Locomotive—2-8-0 Type	4—Cabooses
1—Locomotive—4-6-0 Type	3—Steel Hopper cars
2—Passenger & baggage cars	1—Box car
1—Passenger car	2—Gondola cars
2—Dump cars	3—Flat cars

Large quantity railroad ties
Miscellaneous railroad equipment

Specifications furnished on request

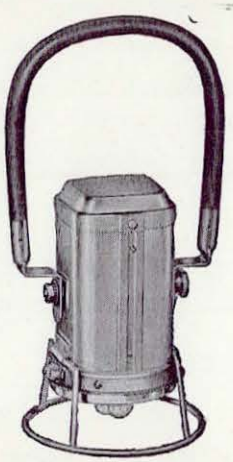
Susquehanna & New York Railroad Co., Williamsport, Pa.

WIRE ★ WRITE ★ PHONE

DULIEN STEEL PRODUCTS, INC.

Room 2280 Woolworth Bldg., New York, N. Y.
Tele. COrt. 7-4676

DELIVERING the GOODS on America's Right of Way



Justrite Lanterns are built to allow for easy replacement of parts. Write today for details and prices.

JUSTRITE
TWIN-BULB
TRAINMEN'S LANTERN

Sturdy, dependable light where it's needed . . . that's why the men on Limiteds and freights choose Justrite every time. 662 candle-power forward beam—110 car length visibility. Light to sides from same bulb. Power to cut smoke and fog. Space in lid for two spare bulbs. *And the Justrite Twin-Bulb Safety feature—if one bulb burns out, a flip of the switch lights the other immediately.*

JUSTRITE MANUFACTURING CO.
2086 Southport Ave., Chicago, Ill.

JUSTRITE *Safety Products*

SAFETY CANS · FILLING CANS · OILY WASTE CANS
APPROVED SAFETY ELECTRIC LANTERNS

INCREASED PASSENGER COMFORT

Steam Couplers
A. R. A. STANDARD
Flexible Conduits
REPLACES RUBBER HOSE
Vapor Systems
THERMOSTATIC CONTROL
Air Conditioning Controls

WITH

VAPOR
ENGINEERED PRODUCTS

BE SURE ITS GENUINE VAPOR ENGINEERED
VAPOR SYSTEM
GUARANTEED EFFICIENCY

VAPOR CAR HEATING CO. INC.
RAILWAY EXCHANGE, CHICAGO, ILL.

Index to Advertisers

October 31, 1942

A

Ajax Hand Brake Company ..... Back Cover
American Arch Company, Inc. 35
American Car and Foundry Company 16, 17
American Locomotive Company 7
American Steel Foundries 21
American Steel & Wire Co. 8, 9
Association of American Railroads 24

B

Baldwin Locomotive Works, Inc. 12, 13
Bethlehem Steel Company 3
Buda Company, The 22
Byers Co., A. M. ..... Front Cover

C

Carey Manufacturing Company, The Philip 39
Carnegie-Illinois Steel Corp. 8, 9
Chicago Railway Equipment Co. 15
Classified Advertisements 38
Columbia Steel Company 8, 9
Consolidated Equipment, Inc. ..... Back Cover

D

Dearborn Chemical Company 5
Dulien Steel Products, Inc. 39

E

Edgewater Steel Company 4
Electro-Motive Division, General Motors Corporation 32

F

Franklin Railway Supply Company, Inc. 34

G

General American Transportation Corporation 26
General Electric Company 7
General Steel Castings Corp. 23
Get Together Department 38
Griffin Wheel Company 20

H

Hanna Stoker Company, The 18, 19
Harbison-Walker Refractories Co. 35
Hunt-Spiller Mfg. Corporation 37
Hyman-Michaels Company 38

I

Iron & Steel Products, Inc. 38

J

Justrite Manufacturing Co. 39

K

Kerite Insulated Wire & Cable Co., Inc., The 39

L

Lima Locomotive Works, Inc. 33
Locomotive Finished Material Co., The 27
Locomotive Firebox Company 6

N

National Bearing Metals Corporation 11
National Malleable and Steel Castings Company 14

O

Ohio Locomotive Crane Co., The 38

P

Pullman-Standard Car Manufacturing Co. 25

R

Railway Educational Bureau, The 38
Railway Steel Spring Division American Locomotive Co. 2
Ramapo Ajax Division, The American Brake Shoe & Foundry Company 10
Ryerson & Son, Inc., Joseph T. 40

S

Schaefer Equipment Company 41
Scully Steel Products Co. 8, 9
Sonken-Galamba Corp. 38
Superheater Co., The 36

T

Tennessee Coal, Iron & Railroad Company 8, 9

U

Union Switch & Signal Company 30
United States Steel Corp. 8, 9
United States Steel Export Co. 8, 9

V

Vapor Car Heating Co., Inc. 39

W

Westinghouse Air Brake Co. 28

RYERSON CERTIFIED STEELS

● You get uniform, high quality *Certified* Steel when you draw on the large and complete stocks of the nearby Ryerson plant. Prompt shipment assured. Write for Stock List. Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

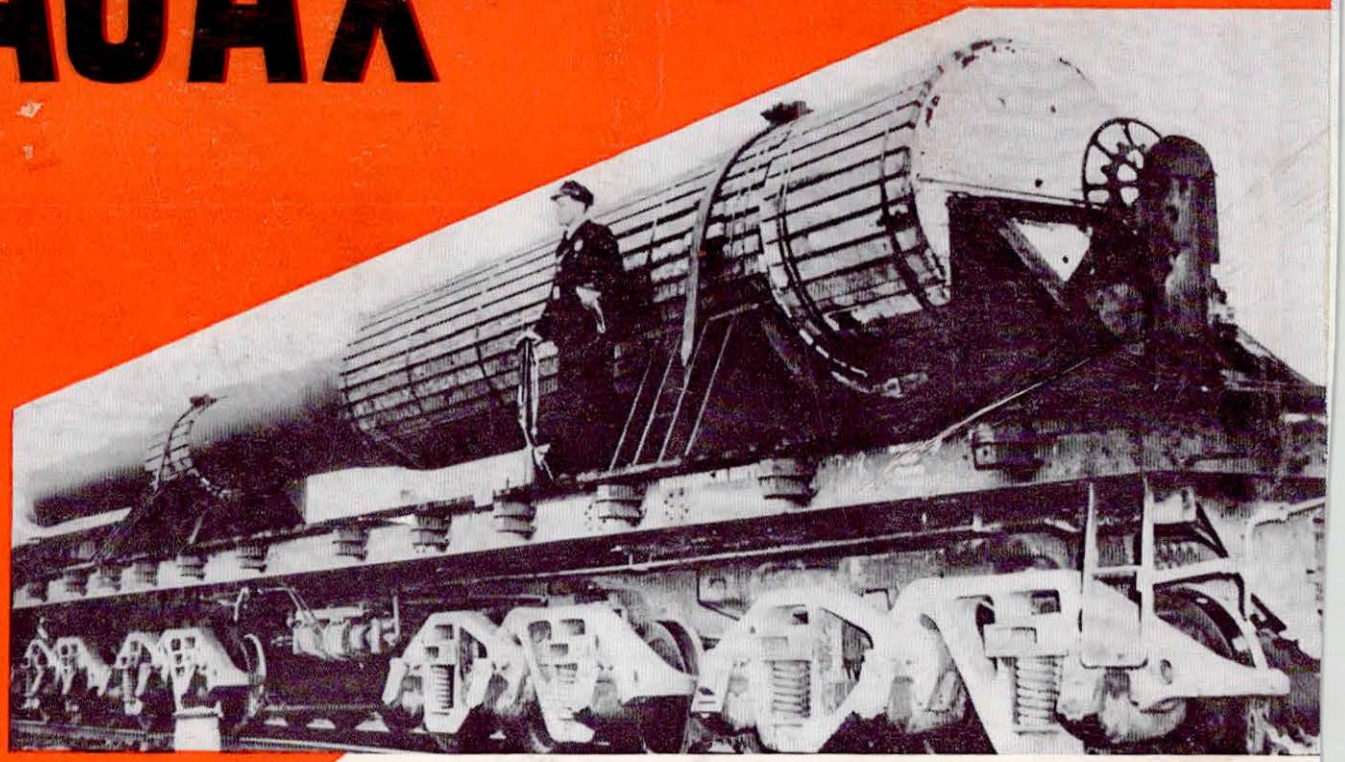
Are Safer..yet COST NO MORE!

Principal Products Include:

Structurals, Lewis Iron, Plates — Sheets, Strip, Alloys — Cold Finished Steel, Tool Steel, Stainless — Mechanical Tubing, Boiler Tubes, Welding Rod — Babbit Solder, Reinforcing Nails, Rivets, etc.

RYERSON CERTIFIED STEELS

AJAX *Hand Brake*



Where
Availability - Efficiency - Safet
are IMPORTANT

Railroads and Private Car Owners Depend on

AJAX Power Hand Brake

That is why Approximately 25% of all freight cars already ar

AJAX EQUIPPED

Specify *Ajax Power Hand Brakes* for all freight equipment, including flat, tank, gondola and hopper cars.

Always Dependable

AJAX HAND BRAKE COMPA
CHICAGO NEW YORK
Sole Agents for United States
CONSOLIDATED EQUIPMENT, Inc
4607-15 West 20th Street, Chicago, Illinois

The original AJAX principle has not been changed, it was **right** from the **start.**

Full Patent Protection

Less Weight
Longer Life

On new *Freight* equipment, Schaefer connections through the bolster in combination with Schaefer loop hangers and truck levers—is *the modern way.*

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

LOOP, "U" AND STIRRUP TYPE BRAKE BEAM HANGERS... TRUCK, CYLINDER AND FLOATING LEVERS
TRUCK LEVER CONNECTIONS... BRAKE ROD JAWS... WEAR PLATES... BRAKE SHOE KEYS